

PS-II

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE

CHRONICLES



From the Desk of the Editor

It is my great pleasure to bring forth the 5th edition of the PS Chronicles.

This edition features over 700 articles from mentors, students and PS faculty sharing their experience from the I Semester of 2017-2018. This huge increase in numbers is a testimony to the usefulness of the PS- II Chronicles and its increasing popularity.

The primary aim of the PS Chronicles is to record the overall PS-II Experience of all the stakeholders – the students, the PS Faculty and the Industry Mentors.

The objectives of this Chronicle are manifold

- Prospective PS-II students can get to know about the experience of their seniors, currently at PS – thereby increasing awareness in the student community
- Increasing awareness among faculty about the nature of work happening in PS
- Bring back the experience gained in PS into academics- making the curriculum more industry relevant.

I would like to thank everyone who has participated in this activity- the students, the industry mentors and the faculty for sharing their experience. Thanks for making the 5th edition an even more bigger and better experience.

I would also like to thank and congratulate my editorial team for a task well done.. I would also extend my thanks to Atul, Veena, Sunil & Ganesh of the Practice School Division, of BITS, Pilani – K K Birla Goa Campus for their help in bringing out the editions of PS Chronicles.

I would be happy to receive any feedback regarding the Chronicles. Please feel free to email me at psd@goa.bits-pilani.ac.in or at anupkr@goa.bits-pilani.ac.in

K.R. Anupama

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Name: Siddharth Harshe (2013B5A80650G)	517
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Name: Dhruv Dave (2012B3A80538P)	528
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Student	530
Name: Amandeep Singh (2013B3AB538P)	530
<i>PS-II Station: MSCI (Solution Management), Mumbai</i>	<i>531</i>
Student	531
Name: Aditya Jha (2013B3A30460G).....	531
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Student	532
Name: Arnav Kumar (2014A7PS0119G).....	532
Name: ROHAN TOTEJA (2014A7PS0018G).....	532
<i>PS-II Station: My POS Technologies Pvt. Ltd., Mumbai</i>	<i>534</i>
Student	534
Name: Divya Prakash Singh (2014A8PS0496H)	534
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Name: Dr Yvk Ravi Kumar	535
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Name: Parul Behl (2013B4A1773P)	536
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Student	537
Name: Girish Vamsi Reddy (2013A8PS0541H).....	537
Name: Vibhu Jain (2013B4A30521H).....	537
Name: Anmol Shukla (2014A3PS0274G).....	538
Name: shonhit trehan (2013B3A80665P)	538
Name: Shubham Ranjan (2013B4A30640H)	539
Name: Atharv Gupta (2013B4A30781P)	540
Name: Vidya Yalla (2013A7PS100H)	540
Name: Divy Saxena (2014A8PS0461P).....	541
Name: Akash Chintla (2014A3PS0241P)	542
Name: SIDDHARTHA (2014A8PS0380G)	543
Name: Aravind Choutpally (2014A3PS0432H)	543
Name: Aman Nidhi (2013A3PS0400H).....	544
Name: KANCHERLA SAI YASHWANTH REDDY (2014A3PS0192P)	545
Name: Dhwanit Mahajan (2014A3PS0293G).....	545
Name: Syed Azeem (2014A3PS0185G)	546
Name: Devesh Nag (2014A3PS0305P)	546
Name: Harsh Vijay (2013B4A10614G)	547
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Name: k chaitanya krishna reddy (2013B4A20680H)	549
PS-II Station: NextGen PMS Pvt. Ltd - Non IT, Bangalore	550
Student	550
Name: Aditya Krishna Kotha (2014A7PS0065H)	550
Name: Umang Rustagi (2013B4A70742G)	550
Name: Chilaka Ramakrishna (2014A7PS0123P).....	551
PS-II Station: Nucleus Software Export Ltd, Noida	552
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Name: Ritu Arora	552
Student	553
Name: Vibhor Gupta (2014A7PS0161H)	553

Name: SHIVENDRA KUMAR (2013B5A30621G)	553
Name: TUSHAR (2013B1A30883G)	554
Name: Shivanshu Dwivedi (2014A3PS0232P)	554
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Name: Tapesb Bhandari (2014A3PS0209G)	555
Name: Shantam Kumar (2014A8PS0436G)	556
Name: Shrey Gaur (2014A3PS0730G)	556
Name: Nishant Poonia (2014A3PS0244P)	557
Name: Rishabh Srivastava (2013B5A80674G)	558
Name: Ashwin Joshi (2013B4A30761H)	558
Name: Vaibhav Singh (2014A3PS0161P)	559
Name: Harsh Maliwal (2014A3PS0228G)	560
Name: SAHITYA SETU TAHILIANI (2014A8PS0775G)	561
Name: Siddharth Kumar Singh (2014A3PS0418H)	562
<i>PS-II Station: Nutanix Technologies India Pvt. Ltd., Bangalore</i>	<i>564</i>
Student	564
Name: Sanjeev S (2013B4A70495G)	564
Name: Abhijith Warriar (2013B3A70309G)	564
<i>PS-II Station: Nvidia Graphics - Software, Hyderabad</i>	<i>566</i>
Student	566
Name: kapil gupta (2013B4A30537H)	566
Name: Sriram Saranga (2014A3PS0313H)	567
Name: Chekuri Rakesh Krishna (2014AAPS0231H)	567
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<i>PS-II Station: Nvidia Graphics - Software Systems, Pune</i>	<i>569</i>
Student	569
Name: Shivam Arora (2013B2A30840P)	569
Name: Akash Nair (2014A3PS0330G)	570
Name: Tarun Raghav (2013B2A80829P)	570
<i>PS-II Station: Nvidia Graphics - Hardware, Bangalore</i>	<i>572</i>
Mentor	572
Name: Deepank Gupta	572

Name: Sudhakar Raju.....	573
Name: Sivakumar Anandan.....	574
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Name: Sandeep Trasi	576
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Name: Bhuvan Gupta	579
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Name: Ritu Arora	580
Student	581
Name: Shourya Punj (2013B4A30746G)	581
Name: Abhinav Rajput (2014A8PS0460G)	581
Name: Sarthak Garg (2014A3PS0217P)	582
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Name: Arnav Dixit (2014A7PS0084G)	584
Name: Niranjana sooda (2014A7PS0008H)	584
Name: Taveesh Sharma (2014A7PS0121G)	585
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Name: Sai Pranav Ch (2013B3A30566H).....	586
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Name: K Akhil Chakravarthy (2014A7PS0092H)	587
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Student	588
Name: Ekansh Jain (2014A7PS0771G)	588
<i>PS-II Station: Qubole, Bangalore</i>	<i>590</i>

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Name: Uma Maheswari Natarajan	590
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Name: vaibhav beriwala (2014A7PS0043P).....	591
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Name: Abhishek Dixit (2013B3A70833P).....	592
Name: Namrata A Shettar (2013B4A70668G)	592
Name: Ankur Raj (2014A7PS0134H)	593
Name: Mayur Bhosale (2013B3A70556G)	594
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Name: Rohit Agrawal (2013B1A20375P)	597
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Name: ADITYA VIKRAM (2013B4A30460H)	600
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Name: Advait Parey (2013B3A30462G)	601
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Name: Akshaya Ganesan.....	603
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Name: Sadhana Srinivasan (2013B4A40654P).....	604
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Name: Abdul Khalik Shaik (2013B3A70723H).....	606

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Name: Divyansh Gupta (2014A7PS0136P)	610
Name: Shashwat (2014A3PS0307P)	610
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Name: Karan Gill (2013B4A80759P)	612
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Name: Prudhvi Tej Jayanthi (2014A7PS0111G)	613
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Student	615
Name: Saurabh Sikchi (2014A7PS0070G)	615
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Student	616
Name: Kuncha Krishna Sai (2014A3PS0292P)	616
Name: Satyariya Singh (2013B1A30356P)	616
<i>PS-II Station: Symantec Software Solutions Pvt. Ltd - Data Analytics, Pune.....</i>	<i>618</i>
Student	618
Name: Lalit Kiran Naidu (2014A7PS0044P)	618
Name: Pankaj Tiple (2013B4A70381G)	618
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Name: Vineet Garg.....	620
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Name: Raghu Ram (2014AAPS0245H)	623
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Name: Desai Nikhil (2013A7PS0099G).....	624
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Name: Bharat Kumar Gandhi (2014A2PS0682P)	627
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Student	629
Name: G.S.V.N. ANOOP (2014A7PS0134P).....	629
Name: Komal Sai (2014A7PS0118P)	630
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<i>PS-II Station: Walmart Global Technology Services, Bangalore</i>	632
Student	632
Name: HARSHITA RAJPUROHIT (2013B4A80764P).....	632
Name: Sribalaji M (2014A3PS0241G).....	632
Name: Abhijeet Pandey (2014A8PS0440G)	633
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PS-II Station: Yrals Digital India Pvt Ltd., Mumbai	650
Student	650
Name: Sanchit Aditya Nangia (2013B2A30268P).....	650
Name: Akshat Bordia (2013B1A20376P)	650
Name: Ankush Goyal (2014A2PS0521P)	651
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Name: Divanshu Aggarwal (2014A7PS0154P)	657
Name: Abhiram Vivek Shastri (2014A7PS0149P).....	658
Name: Shivam Mantri (2014A7PS0071P)	659
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Name: MARAMREDDY SANATH (2014A2PS0572H).....	661
Domain: Biological Science	663
PS-II Station: Beckman Coulter (formerly ReaMetrix India P Ltd), Bangalore ..	663

Student	663
Name: Dhanya (2014A5PS0806H)	663
<i>PS-II Station: Hindalco Innovation Centre - Semifab, Talaja, Navi mumbai</i>	<i>664</i>
Student	664
Name: SRI CHAITANYA S. (2014A4PS0320P)	664
Name: Sukrit Rao. (2014A4PS0294P).....	664
<i>PS-II Station: National Centre for Biological Sciences, Bangalore</i>	<i>666</i>
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Name: SHIVI JAIN (2013B1A10837P)	666
Name: Suma Chinta (2013B1A4903H)	667
Name: MUDRIKA SINGHAL (2013B1A10245P).....	668
<i>PS-II Station: National Institute of Science and Tech. Dev. Studies (NISTADS), New Delhi</i>	<i>670</i>
Student	670
Name: ANKIT RAJ (2014D2TS0983P).....	670
Name: Arpit Choudhary (2014AAPS0337H).....	670

Domain: Core Engineering

PS-II Station: Aditya Birla Chemicals (Thailand) Ltd-Sulphites, Thailand

Mentor

Name: Rakesh Sonny

Designation: Head Technical Cell / Projects / Safety & Sustainability / Operational Excellence

It is our privilege too to have PS-II students from BITS.

Faculty

Name: Arun Maity

Comments: Expectations from industry: GRASIM and Aditya Birla Chemicals projects were technical and related to Chemical engineering. Students have done relevant courses during their studies.



Student

Name: Lokesh Anaparthi (2014A1PS0701H)

Student Write-up

Short Summary of work done during PS-II: Root cause analysis of caking in Potassium metabisulfite & Small crystal sizes of Sodium sulfite products

Tools used (Development tools - H/w, S/w): Microsoft Project, Chemical Reactive Worksheet, Origin6.0

Objectives of the project: To find the cause & improve the size of sodium sulfite crystals

Outcomes of the project: Found out the parameters affecting the size and suitable recommendations are made

Major Learning Outcomes: Learnt in depth about many unit operations

Brief Description of working environment, expectations from the company: Working environment is very professional and the company expect focus & determination to wards the assigned work as they are real time problems that occur in the company

Academic courses relevant to the project: Heat transfer , separation process , Unit operations , Mass transfer concepts, Process design & Principles

Name: Yash Lata (2014A1PS0632H)

Student Write-up

Short Summary of work done during PS-II: Project started with learning of the comprehensive process which Aditya Birla Chemicals Thai Peroxide Limited follows to produce Hydrogen, an intermediate product to make Hydrogen Peroxide. Following finding the means and the ways to increase production of Hydrogen, which is the main component of the production. Simultaneously parallel jobs such as to make a new methods such as new start up procedure and new steam to carbon ratio, which should be followed to prevent unwanted breakdown of plant and for smooth and safe functioning of designing Heat exchanger were also there. A detailed study to achieve design standards to was carried.

Tools used (Development tools - H/w, S/w): MS Project, MS Excel

Objectives of the project: To increase productivity of Hydrogen Peroxide plant by optimization

Outcomes of the project: without decreasing the actual daily production, we achieved a lower energy to product ratio by changing some operations. Major economic value was added in view of Natural Gas (Fuel as well as Raw material) due to reduction in consumption.

Major Learning Outcomes: Data Analysis, econometrics of new project

Brief Description of working environment, expectations from the company: The Company has a very friendly environment with a great mixture of Indians and Thais. Unlike other firms, ABC respect their interns and give constructive and valuable work which is helpful for both company and intern.

Academic courses relevant to the project: All CDC of Chemical Engineering.

PS-II Station: Aditya Birla Science & Technology Company Ltd., Mumbai

Student

Name: Raj Ranjan Singh (2014A1PS0469H)

Student Write-up

Short Summary of work done during PS-II: I have worked on one of the ongoing projects here at ABSTC, where we are supposed to reduce clinkerization temperature. Since clinkerization requires huge amount of energy (1450'C), depreciating its temperature by 20-30'C would be an achievement.

Tools used (Development tools - H/w, S/w): XRD, XRF, Carbolite Furnace, Oven, Optical Microscopy

Objectives of the project: To study the evolution of different phases during clinkerization

Outcomes of the project: Project has been completed and we have been successful in convincing one of the Ultratech Plants to implement this on trial basis

Major Learning Outcomes: Manufacturing of cement, study of evolution of phases, learned about analytical tools like XRD, XRF, SEM, TGA and laboratory procedures, operating carbolite furnace

Details of papers/patents: Research work done by me will be submitted for publication by my mentor

Brief Description of working environment, expectations from the company: Working environment is very good, very cooperating people, too much learning opportunities, only expectation is to increase the stipend, it's 8500/-

Academic courses relevant to the project: Thermodynamics, Heat Transfer, Material Science

Name: Rajat Bansal (2014A1PS0734P)

Student Write-up

Short Summary of work done during PS-II: Aluminum reduction cells are used to produce aluminum by electrolysis of aluminum oxide, a process known as the Hall-H roult process. Process behavior in the aluminum smelting industry is typically highly dynamic and unstable and involves non-linear, highly dimensional relationships among process parameters. Therefore, a control algorithm is required to stabilize the performance of the reduction cell. Therein lies the importance of avoiding or reducing the harmful effects by taking appropriate actions early enough, in the view of various time lags such as the delay caused by the time required to dissolve the alumina into the bath. Time series predictive modeling is the one of the method to control the anode effects. We can maintain the required alumina percentage in the bath. We used Matlab for this Project and successfully developed a predictive model for aluminum smelter. i used neural network for this project.

Tools used (Development tools - H/w, S/w): Matlab, Scilab, Microsoft Excel, Python

Objectives of the project: Development of a predictive process control model using machine learning tool (such as neural network) to forecast pot response and also identify the optimal operating window for aluminium smelter operation at lower specific energy.

Outcomes of the project: So this predictive model will help in energy saving by predicting odd behavior like anode effect and sludge formation. As this model is able to replicate the behavior of existing cell output on the basis of dump. So we can predict the resistance on the basis of dump

Major Learning Outcomes: Basic Programming in Matlab and Python. Data Analysis by Excel and Python,, Basic Artificial Neural Network.

Brief Description of working environment, expectations from the company: Company has World class R&D organization comprising multidisciplinary team of scientists and engineers. This Company Provides engineering solutions resulting in process improvements and new product development. Good work environment, good exposure, you get a hands-on experience in simulations and modeling, one can develop skills in problem-solving and learning about various industrial process.

Academic courses relevant to the project: Neural Network, Basic knowledge of Matlab and Simulink, Process dynamics and control, General Chemistry, modeling and simulation in chemical engineering.

Name: Dhamsaniya Anand Maheshbhai (2013B1A10688G)

Student Write-up

Short Summary of work done during PS-II: The work was mainly experimental, got hands on experience of intensive work in laboratory. Got to use new equipment's and learned a lot. The project was based on photocatalyst synthesis (ZnO) and then infusing the same in Graphene Oxide membrane out of which the synthesis of ZnO was the part I worked on.

Tools used (Development tools - H/w, S/w): XRD, Carbolite furnance, BET, FTIR, UV, PSA

Objectives of the project: Synthesis of ZnO photocatalyst nanoparticles and infusing them on graphene oxide membrane.

Outcomes of the project: The synthesis of ZnO using different techniques was successful.

Major Learning Outcomes: Got to use various lab equipment's and gained a lot of theoretical knowledge.

Brief Description of working environment, expectations from the company: The work environment is great, people are very supportive and helpful. The auro of the work place is such that you feel like learning things and exploring different aspects of research.

Academic courses relevant to the project: Thermodynamics, Material Science, Heat Transfer, Chemical reaction engineering.

PS-II Station: Altair Engineering India Pvt. Ltd., Bangalore

Student

Name: Sushmitha Beled (2014A4PS0278H)

Student Write-up

Short Summary of work done during PS-II: Developed a virtual multi body dynamics simulation and a real working proto of a human hand. There was a common master control given to both these models for external control using Functional Mock-up Interface.

Tools used (Development tools - H/w, S/w): SolidThinking Activate, Embed, Evolve and Hyperworks Motion View

Objectives of the project: To connect various software tools on one platform

Outcomes of the project: A virtual hand model and a physical prototype

Major Learning Outcomes: Model based Simulation, Multi Body Dynamics Modeling, 3D modeling, working with micro controllers, embedded system model based simulation

Brief Description of working environment, expectations from the company: The work environment is a flexible in regard for timings. Every employee within team, department and office is connected with the another. Reaching out for help is easy with every intern, senior engineer and manager enthusiast about teaching and helping.

Academic courses relevant to the project: Mechatronics, Kinematcs and Dynamics of Machinery, Production Techniques, CAD

Name: Aakash Singhal (2014A4PS0768G)

Student Write-up

Short Summary of work done during PS-II: Data Extraction and integration into Database

Tools used (Development tools - H/w, S/w): Java,R

Objectives of the project: Push any data file directly to database

Outcomes of the project: Successfully created GUI for the above objective

Major Learning Outcomes: JAVA,MySQL,R ,JSP,HTML

Brief Description of working environment, expectations from the company: Great working environment with many opportunities as the company is expanding in various fields.

Academic courses relevant to the project: Java programming

Name: Rahul Salla (2014A4PS0249G)

Student Write-up

Short Summary of work done during PS-II: The project involves getting accustomed with the HyperWorks software package. The work comprises of modeling and designing mechanisms to test MSolve module in python. Work has been done on spring damper model, six bar mechanism, slider crank mechanism, telescopic boom lift, pendulum and windshield wiper mechanism. The overall objective of the project is to validate features and identify errors and deficiencies in MSolve and reporting to the development team, checking the performance of MSolve and building models to add to the suite of test/training models.

Tools used (Development tools - H/w, S/w): MotionView, MotionSolve, HyperView, HyperGraph, Basic Python

Objectives of the project: Validate features, identify errors and deficiencies in MSolve. Reporting to the development team, checking the performance of MSolve and building models to add to the suite of test/training models.

Outcomes of the project: Building models to add to the test suit of test/training models in HyperWorks

Major Learning Outcomes: Optimization Techniques, CAD modeling

Brief Description of working environment, expectations from the company: A positive workplace with passionate employees and good team working skills makes it a very good learning experience. Flexible timings allows for any delays in the infamous Bangalore traffic. Managers are kind and co-operative. Company expects the intern to give brief presentations about their work and findings at least once in two weeks. Being a multinational company, off time meetings are to be expected.

Academic courses relevant to the project: Engineering Optimization

PS-II Station: Autodesk, Hyderabad

Student

Name: Vishal Agrawal (2014A7PS0007G)

Student Write-up

Short Summary of work done during PS-II: NewRelic is one of the cloud based real time analytics service. It provides monitoring and management of cloud application. Autodesk's Fusion360 Team product has basic NewRelic integration helping to do health monitoring. My project was aimed to capture more functional and non-functional analytical data and publish to NewRelic, as new metrics. These metrics can help in bringing in-depth visibility of the product's health, user behavior, detect anomalies and perform real-time diagnostics. The metrics are pushed to NewRelic using it's Java Agent API, from various integration points in Fusion360 Team product..

Tools used (Development tools - H/w, S/w): Vagrant, IntelliJ, Java8, Ant, MySQL

Objectives of the project: Project was aimed to improve the monitoring and management capabilities of NewRelic to find the errors in path, performance bottlenecks and other issues more efficiently.

Outcomes of the project: Autodesk has now better insight to their application. It can monitor its background jobs that are significant part of the application. They have more information related to a request to debug the issue helping them relating the request in multiple monitoring tools and desired custom metrics from database regarding their offline jobs to monitor the health of their webapp.

Major Learning Outcomes: The experience at Autodesk is one that has proved to be more practical than anything else taught academically. It has been brilliantly enlightening in the sense that any student who wishes to experience the real application of his/her learning during his/her career can do that on the Practice School 2. It can be specially helpful to those who wish to decide on a career path by getting actual experience. During my internship period at Autodesk, I learnt a whole lot of stuff including major technologies, communication skills and management skills. The technologies include Spring Framework, Gradle and Ant, Design Patterns, Database Transactions, major modelling techniques etc. , which are not usually taught in the academic syllabus. There is a difference in writing simple code and creating useful client based services by coding and this one difference was the highlight of my stay at Autodesk.

Brief Description of working environment, expectations from the company: My experience at my Autodesk Hyderabad, involved complete and overall industrial exposure to the corporate IT lifestyle. There were no office timings, and the choice of my office timings was left up to me. In the long run, this instilled a sense of responsibility in me, since I was responsible for my working hours and completing the tasks given to me in the span of those hours. Additionally, all the projects I had done in college had never been tested in a practical environment, by actual users. I learnt here how different the practical applications are compared to the academic work done earlier.

Academic courses relevant to the project: Object Oriented Programming, Datastructure and algorithm, Design and Analysis of Algorithms, Database Management Systems

PS-II Station: Autodesk India Pvt. Ltd., Pune

Student

Name: Akhil Kumar Agrawal (2014A7PS0024P)

Student Write-up

Short Summary of work done during PS-II: Feature Enhancements of Fusion 360, Bug fixing, Scripts for fetching and packaging the third parties of Fusion 360, stabilization and testing on Fusion 360.

Tools used (Development tools - H/w, S/w): S/w - C++, Jenkins

Objectives of the project: Fusion 360 Development

Outcomes of the project: Fusion 360 is a better product

Major Learning Outcomes: C++ coding

Brief Description of working environment, expectations from the company: The people here are very friendly and they are always ready to help. The office is decorated which helps you have a pleasant mind. It is a good place to work. They don't have time constraints so it helps in maintain a proper work-home balance.

Academic courses relevant to the project: C Programming, Object Oriented Programming.

PS-II Station: Autodesk India Pvt. Ltd., Pune

Student

Name: VIVEK KUMAR (2014A2PS0645P)

Student Write-up

Short Summary of work done during PS-II: Design of underground water tank for the residential buildings under the housing scheme for DDA Housing Scheme, Pocket 13, Narela on land bearing at Narela, Sector A1 A4, Delhi. Planning of daily construction schedule of various activities through Critical Path method for each block of the pocket. Quantity and Cost Optimization. Attending various training presentation and seminars. Studying of Precast Construction of Slabs, Columns and Beams.

Tools used (Development tools - H/w, S/w): Excel, STAAD Pro

Objectives of the project: DESIGNING OF UNDERGROUND WATER TANK

Outcomes of the project: Reinforcement was computed and lattice girders were computed.

Major Learning Outcomes: Moment Distribution Method, Lattice Girder application.

Brief Description of working environment, expectations from the company: Working environment was good, motivating and learning experience.

Academic courses relevant to the project: Design of Concrete Structures, Foundation Engineering & Soil Mechanics

PS-II Station: Bharat Forge Ltd, Pune

Student

Name: Gagneet Singh (2014A4PS0132G)

Student Write-up

Short Summary of work done during PS-II: Worked closely with the team at Bharat Forge to develop a program that predicts the trajectory and different flight parameters of a shell fired from an Advanced Towed Artillery Gun(ATAG)

Tools used (Development tools - H/w, S/w): MATLAB

Objectives of the project: Developing a program that predicts the trajectory and different flight parameters of a shell fired from an Advanced Towed Artillery Gun(ATAG)

Outcomes of the project: The program predicted the range and different parameters up to a fair degree of precision

Major Learning Outcomes: Learnt a lot about the subject of External Ballistics and how manufacturing works on a large scale

Brief Description of working environment, expectations from the company: The working environment at Bharat Forge is extremely professional. The colleagues at Bharat Forge and the managers are extremely polite and helpful.

Academic courses relevant to the project: MOW, Gas Dynamics

Name: Abhijeet Rakde (2014A4PS0769G)

Student Write-up

Short Summary of work done during PS-II: The project included a trial setup of howitzer which can be experimented upon for testing of various features. One of the features which required experimentation and testing is the use of rebound energy of the muzzle of howitzer in loading the next projectile. This reduces the amount of energy used by the next projectile to load by getting some of the energy from previous rebound. As the effective energy required for loading the projectile is same, the energy is optimized effectively. This reduces the finances required and helps the company to save money.

The main aim of the modeling and assembly of the howitzer was the above mentioned feature.

The problem was divided in to parts

- i) To model the howitzer in solidworks
- ii) To test features on the model

The full project included the first part of the problem only.

Tools used (Development tools - H/w, S/w): Solidworks

Objectives of the project: Reducing finances of the company. Helping company in saving energy and fuel

Outcomes of the project: The trial basic howitzer was modeled to be experimented upon. This solidworks assembly can be further used for conducting experiments or conducting tests.

Major Learning Outcomes: Advanced knowledge of Solidworks, Knowledge of CAD/CAM, Team Work, Machine Designing, Defense Technology, etc

Brief Description of working environment, expectations from the company: Friendly working environment. Lots of learning opportunities. Helping and cooperative mentors and staff.

Academic courses relevant to the project: CAD , Machine Design and Drawing

PS-II Station: Century Rayon, Mumbai

Student

Name: S JISHNU DEVAN (2014A1PS0589G)

Student Write-up

Short Summary of work done during PS-II: Our project dealt with the reduction of BOD of effluent by treating waste caustic with recyclable acid streams to settle hemicellulose which causes maximum BOD. A pilot plant was also set up and different trials were conducted varying parameters to optimise the conditions. The acid stream chosen to react with caustic was that from the central trough recovery. The streams were mixed stoichiometrically and required quantity of coagulant PAC was added to settle hemi faster. A flow sheet was developed to scale up the process

Tools used (Development tools - H/w, S/w): Reactor, stirrer(1400 rpm)

Objectives of the project: Reduction of BOD by separating hemicellulose from waste caustic.

Outcomes of the project: The process of neutralising waste caustic with acid from central trough recovery was found to be successful

Major Learning Outcomes: Experimental knowledge, knowledge about yarn production and the use of byproducts

Brief Description of working environment, expectations from the company: The Company gave us ample opportunity to research and experiment.

Everyone in the company was very supportive to us in our endeavour and we are happy with the working environment provided.

Academic courses relevant to the project: Chemical Engineering Laboratory

PS-II Station: Development Consultants Pvt. Ltd. (DCPL), Mumbai

Student

Name: Tushar Gupta (2014A2PS0730P)

Student Write-up

Short Summary of work done during PS-II: Designing of Beams Columns and Foundations

Tools used (Development tools - H/w, S/w): STAAD

Objectives of the project: Design a STG Building

Outcomes of the project: Final design and reinforcements

Major Learning Outcomes: How the work is done in the industry

Brief Description of working environment, expectations from the company: DCPL sure offers a lot of learning experiences but it has a conservative culture in many senses. One has to put in a lot of effort from one's own end to get hold of a project. The company is not a big corporate or MNC and so it also does not provide as much facilities and pay as do MNCs but from the perspective of learning, it will surely give you better learning opportunities

Academic courses relevant to the project: DCS, DSS, Earthquake

PS-II Station: Divgi TorqTransfer Systems Pvt. Ltd. - Bhosari, Pune

Student

Name: Drona Nawal (2014A4PS0413P)

Student Write-up

Short Summary of work done during PS-II: Worked on VSM for various parts. Prepared both current as well as future state VSM. DMAIC analysis on shortage in production of Ring Gear. Worked on redesigning and design verification of various parts supplied to various companies

Tools used (Development tools - H/w, S/w): Solidworks, Ansys, DMAIC analysis, VSM, MS Excel

Objectives of the project: Value Stream Mapping charts and redesign of various transfer case components

Outcomes of the project: VSM charts prepared for both future and current stages to reduce NVA. Redesigned existing parts to meet customer needs.

Major Learning Outcomes: Lean Manufacturing, Theories of failure, Steps to follow while designing parts at industrial scale

Brief Description of working environment, expectations from the company: Working environment isn't very good. All employees converse in Marathi. Most work assigned is not related to engineering and is mostly follow-up. If you are joining don't keep high expectation. Company gives PPO but work atmosphere and exposure is not upto BITSian standards

Academic courses relevant to the project: Supply Chain Management, Lean Manufacturing, Machine Design and Drawing, Mechanics of Solids, Material Science, CAD

PS-II Station: EnSci - A Unit of Weir Minerals India Pvt. Ltd., Bangalore

Faculty

Name: S. Raghuraman

Comments: Expectations from industry: MBRDI - The industry expects that students come with cross functional knowledge (Mechanical discipline students having learnt Programming). They are interested in students who have idea about Machine learning, IOT to name a few. CAE knowledge is mandatory. The most critical skill that industry looks for is adaptability of students to changing environment and ability to learn new skills quickly.

Student

Name: Jyotiroop Das (2014A4PS0361P)

Student Write-up

Short Summary of work done during PS-II: Core Mechanical Design work, consisting mainly of drafting, drawing and modeling. Also a bit of solid mechanics and analysis.

Tools used (Development tools - H/w, S/w): Worked with excel, solidworks and Unigraphics NX

Objectives of the project: To get acquainted with Unigraphics NX, to understand importance of structural analyses

Outcomes of the project: A firm understanding of core mechanical concepts

Major Learning Outcomes: Learned most major drafting tools across a variety of 3D platforms and softwares

Brief Description of working environment, expectations from the company: Professional working environment, with helpful employees, and a goal driven work ethic

Academic courses relevant to the project: CAD, Mechanics of Solids, Engineering Drawing

PS-II Station: EnSci - Geometric Limited, Pune

Student

Name: Anand Dev (2014A4PS0353G)

Student Write-up

Short Summary of work done during PS-II: Integration of an advanced tool path generation module into CAMWorks software to run on 2.5 axis mill features.

Tools used (Development tools - H/w, S/w): Visual Studio 2012 Professional.

Objectives of the project: Exposure to OOP. Working on large scale coding projects. Build team work.

Outcomes of the project: A more efficient and faster tool path is generated.

Major Learning Outcomes: Brushed up on OOP implementation. Well versed in the current and upcoming machinery automation processes.

Brief Description of working environment, expectations from the company: The divisions still under full control of Geometric Ltd works flawlessly and they are more than happy to help with anything. The HCL controlled divisions of the company such as HR and Finance are very poor.

"Geometric as a company is excellent but the influence of HCL has degraded it" was an existing employee's statement.

Academic courses relevant to the project: CP, CAD, OOP.

PS-II Station: EnSci - Grasim Industries Ltd., Nagda

Mentor

Name: NALIN SORAL

Designation: GENERAL MANAGER - CS2 AND ACID PLANT

The students have made good effort in collecting data, analysis and providing fruitful suggestions to improve quality, productivity, efficiency and reliability

Faculty

Name: Dr. Arun Maity

Comments: Expectations from industry: GRASIM and Aditya Birla Chemicals projects were technical and related to Chemical engineering. Students have done relevant courses during their studies.

Student

Name: Sahil Jain (2014A1PS0750G)

Student Write-up

Short Summary of work done during PS-II: Study and calculation of efficiency/effectiveness of - Refrigeration process in viscose production ,CS2 recovery in spinning process

Tools used (Development tools - H/w, S/w): CHEMCAD

Objectives of the project: To study the refrigeration system required for viscose production and covering following aspects:- 1. Calculation of installed refrigeration design capacity and efficiency of the existing system. 2. Calculation of total refrigeration load at full production during summer and winter. 3. Proposals to improve refrigeration efficiency. To study CS₂ recovery system used in spinning section and covering following aspects:- 1. Calculating log mean temperature difference of various condensers and scrubbers. 2. Calculating the effectiveness of various equipment. 3. Proposals to improve recovery effectiveness.

Outcomes of the project: Understanding the refrigeration process employed at large scale. Understanding Vapor recovery process using scrubber and condensers. Calculation of efficiency of refrigeration and vapor recovery process.

Major Learning Outcomes: Calculation of efficiency of refrigeration and vapor recovery process.

Brief Description of working environment, expectations from the company: Existing viscose manufacturing system in the plant is quite efficient as the same process has been utilized since the inception of the plant.

Academic courses relevant to the project: Heat Transfer, Thermodynamics.

Name: vikash kumar gupta (2014A1PS0532H)

Student Write-up

Short Summary of work done during PS-II: The project is mainly based on data analysis and unit operations. The relevant data for project is collected and then it was analysed. And based upon the findings, the conclusion was made. The data we're mainly temperature of salt, its moisture content, drying time, velocity of water spray in the dryer. Wet and dry bulb temperature. After getting all the data, unit operations were done.

Tools used (Development tools - H/w, S/w): M.S WORD, MS EXCEL, MATLAB, SENSOR THERMOMETER

Objectives of the project: 1. To analyze the existing drying operation carried out in the auxiliary. 2. To suggest measures to deal with the issue of carryover losses of the salt. 3. To bring about a change in overall efficiency of the drying process.

Outcomes of the project: 1) The current diameter of the scrubber, i.e. 1200mm should be increased by around 20-25%, alongside this, the air velocity should be decreased, which would significantly increase the air.

Major Learning Outcomes: A new cyclone dryer can be installed in series with the existing cyclone dryer. The air exiting from the first cyclone would be taken to the second cyclone dryer and thus the carryover losses from the first can be easily minimized by the second dryer.

Recommendations with the Scrubber

1) The current diameter of the scrubber, i.e. 1200mm should be increased by around 20-25%, alongside this, the air velocity should be decreased, which would significantly increase the air's retention time with the water, thus making it more efficient.

2) The concentration inside the scrubber should be maintained because if the solubility increases, it might lead to choking and thus would disrupt the drying flow.

Brief Description of working environment, expectations from the company: It was a really nice working environment; the organization was very helpful and supportive in context of the project. We were provided every help that was required to carry out the project. The safety rules and regulations were properly explained and we were equipped with safety equipment's which was also provided by the company.

Academic courses relevant to the project: SEPERATION PROCESS, MATLAB, PDP

Name: MD EJAZ ANWAR (2014A1PS0572P)

Student Write-up

Short Summary of work done during PS-II: Design of Plate and frame heat exchanger for effective Cold Sump Zone Recycling to increase the overall efficiency in the cooling of the hot sump-zone coming out during fiber production process

Tools used (Development tools - H/w, S/w): ASPEN

Objectives of the project: Designed a plate and frame heat exchanger to reduce the load on the currently installed Packed bed reactor

Outcomes of the project: Reduce load of packed tower by adding heat exchanger with it

Major Learning Outcomes: Heat balance over heat exchangers, packed towers

Brief Description of working environment, expectations from the company: There are a lot of scope in many unit operations currently installed in the firm which can be further replaced or improvised with the latest available equipment's.

Academic courses relevant to the project: Separation process I and II , PDP I

Name: Krishna kumar (2014A1PS0638H)

Student Write-up

Short Summary of work done during PS-II: To improve efficiency and production of the concerned unit i.e. "The Calciner". Finding out the losses of charcoal in the calciner system. The losses may occur in any of the forms churi, dust etc.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: To increase efficiency of Charcoal Calciner.

Outcomes of the project: Found out the stations causing losses in our calciner machine.

Major Learning Outcomes: The project involved the study of various types of coal and charcoal and their origin hence finding out in depth the types of fossil fuels.

Brief Description of working environment, expectations from the company: Good working conditions but the company may improve the safety gears for environmental pollutants from the plant. Also plant should treat its gaseous effluents before releasing into atmosphere.

Academic courses relevant to the project: Separation process, Thermodynamics, Heat Transfer.

Name: Shubham Ajmera (2014A1PS0536G)

Student Write-up

Short Summary of work done during PS-II: Data collected, analyzed and provided results for the first project. Developed PHE to be installed in place of packed bed tower for efficient heat exchange.

Tools used (Development tools - H/w, S/w): Minitab, Excel, COMSOL

Objectives of the project: 1. Jet cleaning and jet room efficiency. 2. Design plate and frame heat exchanger for cold sump zone recycling.

Outcomes of the project: Provided the optimum values and range for viscose and spin bath parameters such as BF, RI, salt concentration, acid concentration. Developed PHE.

Major Learning Outcomes: Got to know, how to use Minitab software for data analysis. Was able to calculate the design equations for PHE.

Brief Description of working environment, expectations from the company: My mentors were very supportive and motivating and provided me with their valuable suggestions through the whole preparation. It was a great opportunity to work in Grasim industry which will definitely help me in future.

Academic courses relevant to the project: Heat transfer, Mass transfer, Chemical Process Technology

PS-II Station: Grasim Industries, Pulp and Fibre Division, Mumbai

Student

Name: Suyash Kirti (2014A1PS0613P)

Student Write-up

Short Summary of work done during PS-II: Data analysis using IBM Watson analytics and automation of production planning using IBM Cplex

Tools used (Development tools - H/w, S/w): Python, Excel, IBM Cplex and IBM SPSS.

Objectives of the project: Use of softwares in automating production planning.

Outcomes of the project: Successful automated the process

Major Learning Outcomes: Python, IBM Cplex and IBM SPSS

Brief Description of working environment, expectations from the company: Very considerate mentor, good mess, nice ambience and prime location of office.

Academic courses relevant to the project: None that I am aware of.

PS-II Station: Grasim Polyfiber, Harihar

Student

Name: SAYAN MAITRA (2013A1PS0707P)

Student Write-up

Short Summary of work done during PS-II: 1. Studying the process 2. Studying the equipment. 3. Studying the raw material. 4. Making a list

Objectives of the project: To research possible modifications for increasing the whiteness of pulp

Outcomes of the project: A rambling, shallow familiarity with the process for me, and a list of suggestions embodied (by the report) for them to analyse the feasibility of incorporation into the existing line on.

Major Learning Outcomes: Python, IBM Cplex and IBM SPSS

Brief Description of working environment, expectations from the company: Looking for relevant info on the Net, quickly and with ease.

Academic courses relevant to the project: The organization had a pleasant working environment, and I was lucky to have been allowed to pick the brains of the people at ground zero.

In terms of the exposure, the company has completely lived up to my expectations.

PS-II Station: Henkel, Mumbai

Student

Name: Shantanu Darveshi (2014A1PS0652G)

Student Write-up

Short Summary of work done during PS-II: The assigned project was preparation of DCS recipes, which involves repetitive copy pasting with some knowledge of the process. None the less the PS offers great learning opportunities outside of the project. I worked to some extent on all fields of the project. Their upcoming plant in Kurkumbh, Pune offers the rare opportunity to see a plant being built.

Tools used (Development tools - H/w, S/w): Excel, Python (I only used it to make copy pasting easier)

Objectives of the project: To develop a DCS recipe from pre-existing "phases" which will be converted to software, which will run on PLCs..

Outcomes of the project: The plant is set to start production in Feb, 2018

Major Learning Outcomes: A broad set of skills was required for the work, Process control, Chemistry, preparing SOPs/WIs, and an insight into the work that goes into design and execution of large projects.

Brief Description of working environment, expectations from the company: The work environment is great however be warned the PS-II form might say the internship is in Navi Mumbai, you will be shifted to Pune as per their requirement.

Academic courses relevant to the project: Process Control, Chemistry

PS-II Station: Hindustan Unilever Research Centre, Bangalore

Student

Name: Sakshi Satyanand (2013B1A10513H)

Student Write-up

Short Summary of work done during PS-II: My study aimed to understand metal-ligand interaction better by employing computational methods of investigation. Theoretical treatment involved Quantum Mechanical calculations on the aforementioned chemical system. Stability constants, from experimental measurements, were used to develop a correlation between theory and experiment.

Tools used (Development tools - H/w, S/w): GAMESS (General Atomic and Molecular Electronic Structure System)

Objectives of the project: Computational Prediction of Stability Constants of Chelators by performing QM calculations

Outcomes of the project: Successful reproduction of experimental trends

Major Learning Outcomes: Performing QM calculations and building a chemical system

Brief Description of working environment, expectations from the company: The working environment is amazingly conducive to productivity. Help is always available when needed.

Academic courses relevant to the project: Biophysics, Engineering Chemistry, Biomolecular modelling

PS-II Station: IFB Industries, Goa

Student

Name: Raghav Kumar (2013B5AB0770P)

Student Write-up

Short Summary of work done during PS-II: The Project I worked on was a Core Mechanical Design Project which required theory of vibrations and dynamics for implementation. The project aimed at reducing the vibrations in the washing machine without any changes in the existing setup. My designs was made into a prototype and it showed substantial reduction in the vibrations.

I also took part in vibration data collection and analysis, psycho acoustic analysis of the washing machine and Damper Studies. The work was very interesting and the working environment was very friendly and encouraging.

Tools used (Development tools - H/w, S/w): SolidWorks, PTC Creo, ANSYS, ADAMS, LMS Test Lab, Accelerometers, Vibrometers

Objectives of the project: Design and Development of Dynamic Vibration Absorber System for Front Load Washing Machine

Outcomes of the project: CAD Models, Simulation Tests, Prototype, Data Results

Major Learning Outcomes: Theory of vibrations, Vibration Reduction, Vibration Absorption, Vibration Damping, Damping Components, Suspension Systems, Spring Mass Systems

Brief Description of working environment, expectations from the company: Company gives you a open atmosphere to choose your topic of choice as your project. There are many interesting multi-discipline project going on right now. You can expect full support for whatever you want to pursue. You just need to work hard to push through as pursuing your topic also means convincing it's usefulness to the company. Keep up the hard work and it will be appreciated.

Academic courses relevant to the project: *Project Specific Courses* - Mechanical Vibrations, Product Design and Development, CAM, CAD.

PS-II Station: John F Welch Technology Center (GE), Bangalore

Student

Name: Sidhant kumar singh (2013B5A40514G)

Student Write-up

Short Summary of work done during PS-II: CFD simulation of coal fired boilers for understanding fluid flow and combustion efficiency.

Tools used (Development tools - H/w, S/w): Ansys

Objectives of the project: Understanding coal combustion for variety of cases

Outcomes of the project: Successfully simulated a 100kW coal boiler

Major Learning Outcomes: Learning CFD, simulation tools, coal combustion and its properties

Brief Description of working environment, expectations from the company: Excellent work environment, very helpful managers and mentors

Academic courses relevant to the project: Fluid Mechanics, Thermodynamics, Applied thermodynamics

PS-II Station: Mercedes Benz, Bangalore

Faculty

Name: Dr. S. Raghiraman

Comments: Expectations from industry: MBRDI - The industry expects that students come with cross functional knowledge (Mechanical discipline students having learnt Programming). They are interested in students who have idea about Machine learning, IOT to name a few. CAE knowledge is mandatory. The most critical skill that industry looks for is adaptability of students to changing environment and ability to learn new skills quickly.

Student

Name: Abhishek Prasad (2013B1A40841P)

Student Write-up

Short Summary of work done during PS-II: To improve crash testing, virtual finite element based human body models(HBM) are created that are used to simulate crash impact situations on a human body to improve and research upon improvements in safety measures in cars. My project involved improvement of THUMS-D HBM by incorporating visceral fat into the model. This will allow the model to be used to understand organ interactions in the abdominal and thoracic cavities in the human body under violent perturbations.

Tools used (Development tools - H/w, S/w): ANSA 16.2.1, LS - DYNA, ANIMATOR 4, LS PREPOST

Objectives of the project: Incorporation of Visceral fat in THUMS-D model to improve its bio-fidelity

Outcomes of the project: The motion of internal organs under physical perturbations are closer to realistic results

Major Learning Outcomes: The internal organs are connected through muscles, fascia layers, fat etc that act as shock absorbers against external perturbations. Incorporation of visceral fat into the virtual model improves its bio-fidelic nature and improves the final results of crash tests using a virtual model.

Brief Description of working environment, expectations from the company: MBRDI has a cohesive, constructive environment which allows open discussion of ideas among peers and a very stream lined work assignment, review and discussions.

Academic courses relevant to the project: CAD, Mechanics of Solids, Kinematics, Material Properties of Solids

Name: Aditya Pratap Singh (2013B5A40434H)

Student Write-up

Short Summary of work done during PS-II: The project was aimed at reducing the noises in Electric motor to be introduced in upcoming cars. For the initial 4 months, studies on basics, working, designing and factors affecting the performance of the electric motor were studied and researched. This also included understanding the mathematical equations and relations involved in working of motor. Simulation software's were being practiced in parallel with the above studies. After a thorough understanding of the theory, simulations were performed for a baseline motor and its 3 variants which incorporated certain changes, to study their effect in increasing net mechanical torque and decreasing the forces being experienced by the stator tooth, thereby reducing the noises

Tools used (Development tools - H/w, S/w): Altair Flux, Hypermesh, NASTRAN

Objectives of the project: To study the electromagnetic forces in Internal Permanent Magnet Motor

Outcomes of the project: Proposed certain design changes which reduced the torque ripple and forces being experienced by stator teeth.

Major Learning Outcomes: Concepts and principles involved in Permanent magnet motor.

Brief Description of working environment, expectations from the company: Positive working environment with no actual pressure. Plan is provided to the student initially which has to be followed, hence student is aware of deadlines. Expectations do exist to obtain learnings which is new to them, but student is not expected to create miracles.

Academic courses relevant to the project: EMT-1, Power systems.

Name: Siddhant Rathore (2014A4PS0187G)

Student Write-up

Short Summary of work done during PS-II: External Aerodynamics of Trucks using OpenFOAM

Tools used (Development tools - H/w, S/w): OpenFOAM and StarCCM+

Objectives of the project: Comparison of OpenFOAM and StarCCM+

Outcomes of the project: OpenFOAM has a lot of advantages over StarCCM+

Major Learning Outcomes: CFD

Brief Description of working environment, expectations from the company: Working environment is a free one. As long as the task assigned is going at the right pace, no one interferes or questions anything.

Academic courses relevant to the project: Fluid mechanics, Computer Aided Design.

PS-II Station: Mytrah Energy (India) Private Limited, Hyderabad

Student

Name: Malvika Paliwal (2013B5A1804P)

Student Write-up

Short Summary of work done during PS-II: Majority of my work included Business Research revolving around study of different policies of India as well as Sri Lanka and Vietnam, in order to formulate market entry strategies. I also took up the responsibility to manage the internal lead referral program and the customer relationship management software, Lead Squared as well. Analyzing sales team's bi weekly performance and generating more lead via employee referrals was my role. I also designed excel tools

for the team in order to calculate tariff for Open Access in different states of India. I also got exposure to marketing and finance side of the business during my internship. One of my tasks was to revamp the solar rooftop website in order to lure in more leads. I also carried out due diligence for various prospective leads in order to test the financial health of the non rated companies. I attended a three day excel workshop as a part of a learning and development program arranged by the company itself. Overall it was a huge learning experience for me, taking away insights about the solar and power market in India and international markets as well.

Tools used (Development tools - H/w, S/w): MS Excel

Objectives of the project: Formulating a Market Entry Strategy

Outcomes of the project: Ongoing talks with various clients in the respective areas of study

Major Learning Outcomes: Market Research, Business Research, Financial modeling, Marketing insights, MS Excel

Brief Description of working environment, expectations from the company: Work environment is very unprofessional. They expect you stay in office even after office timing whether or not you have work. Alternate Saturdays are a holiday according to company policy but the management insists on coming every Saturday without any comp-offs and salary incentives. Work life balance is not maintained properly. More focus should be there on the quality of work rather than number of office hours spent after work timings in the office. Apart from tier one B school graduates everyone else is really underpaid. People try to pull each other down publicly. Slight office politics is okay but this was a shocker for me as an intern.

Work wise for an intern, there is a lot to learn and a lot of exposure at this level. People are helpful and friendly.

Academic courses relevant to the project: Fundamentals of Finance, MS Excel

Name: Kshitij Malani (2014A8PS0520G)

Student Write-up

Short Summary of work done during PS-II:

1. Understood the functionality of Procurement and Project Management Department.
2. Learnt about documents like Design Bill of Material, Purchase Orders, Letter of Credit and Invoices.
3. Gained Technical knowledge of Single Line Diagrams for DC and AC side of Solar Power Plants.
4. Learnt about Advanced Excel Tools to increase the efficiency of data tracking from Project Sites.

Tools used (Development tools - H/w, S/w): 1. Excel (Advance), 2. SAP (Basic Exposure)

Objectives of the project: 1. To Analyse the Structural Vendors on the basis of quantitative and qualitative vendor ratings. 2. Monitoring the Material status for the Solar Project Sites. Outcomes of the project

Outcomes of the project: 1. This Project helped the organization to analyze the Vendors.

2. Material Management has been improved after the Assets Management Initiative.

Major Learning Outcomes: 1. understood the functionality of Procurement and Project Management Department.

2. Learnt about documents like Design Bill of Material, Purchase Orders, Letter of Credit and Invoices.
3. Gained Technical knowledge of Single Line Diagrams for DC and AC side of Solar Power Plants.
4. Learnt about Advanced Excel Tools to increase the efficiency of data tracking from Project Sites.

Brief Description of working environment, expectations from the company: Working environment depends on the mentor you are working under, but extra hours of work can be expected from interns on the basis of critical nature of work and the target time assigned to the work.

Academic courses relevant to the project: Supply Chain Management

PS-II Station: National Aerospace Laboratories, Bangalore

Student

Name: Kushagra Hans (2013B5A40426G)

Student Write-up

Short Summary of work done during PS-II: Developed solar selective coatings of hafnium carbide. Coatings were deposited using a physical vapor deposition process called sputtering

Tools used (Development tools - H/w, S/w): worked on a reactive magnetron sputtering system.

Objectives of the project: To evaluate optical properties of hafnium carbide thin film coatings

Outcomes of the project: Coatings show potential to be used as solar selective coatings

Major Learning Outcomes: I became familiar with sputtering deposition process, thin film optical properties and various characterization techniques.

Brief Description of working environment, expectations from the company: Students get to work in a R&D lab. There is a good chance that you will get to publish your results.

Academic courses relevant to the project: Optics, solid state physics

PS-II Station: National Centre for Biological Sciences, Bangalore

Student

Name: SHIVI JAIN (2013B1A10837P)

Student Write-up

Short Summary of work done during PS-II: The canonical Wg signaling pathway is an important topic of research in cell signaling and developmental biology. The Wg ligand in *Drosophila* interacts with its signaling receptors Frizzled and co-receptor Arrow and binding receptor Dally and Dlp resulting in an activated signaling response. The key player in this signal transduction is the transcriptional activator beta-catenin (Armadillo in *Drosophila*) whose cytoplasmic levels increase when Wingless signaling is active. For this purpose, we cultured S2 pTub Wg cells expressing Wg ligand, to obtain Wg conditioned media which will then be purified. We made efforts to develop constructs expressing Wg GFP, Wg

SNAP and Dfz2 GFP to visualize the said proteins under the microscope and to measure the respective concentrations. Immunostaining and Western blot assays were performed to understand the Armadillo protein accumulation in S2R+ cells exposed to different conditions resulting in signaling activation, as well to check for the presence of Wg upon subjection to various steps for purification. The expectation was to propose a model explaining the change in signaling readout observed on treatment of S2R+ cells with different quantities of ligand as well receptor expressed with respect to time.

Tools used (Development tools - H/w, S/w): I used tools like SnapGene to design plasmids, Western Blots to understand signaling, microscopy for visualization of fluorophores, Imagej for image analysis.

Objectives of the project: The main objectives were 1) purifications of Wg protein 2) expression of tagged ligand and receptor 3) understanding the role of endocytosis over plasma membrane in Wg signaling pathway 4) propose a model for understanding the change in signaling with change in concentration of ligand and receptor

Outcomes of the project: 1) I was able to standardize the protocol for Wg protein purification

2) Design an improved way to isolate Wg protein

3) Development of the Wg GFP expressing construct.

Major Learning Outcomes: This project was extremely useful in practical application of classroom knowledge. I was also able to learn how to design and trouble shoot experiments. Bangalore Microscopy Course gave me the opportunity to explore the field of microscopy superficially.

Brief Description of working environment, expectations from the company: Mayor Lab is provides a great learning opportunity for those interested in understanding cell signaling and microscopy. NCBS in general has a great infrastructure, and a large number of well organised facilities. It is one of the premier places in India for biological research. Working at NCBS, one gets to interact with imminent scientists who have done advanced research in different fields in biological sciences.

Academic courses relevant to the project: Instrumental Methods of Analysis, Recombinant DNA technology, Genetic Engineering Techniques.

Name: Suma Chinta (2013B1A4903H)

Student Write-up

Short Summary of work done during PS-II: Purkinje neurons in the cerebellum play a key role in modulating the outputs from the cerebellum. They exhibit bistability in vivo and in vitro. Presence of two stable states has also been identified in the zebrafish. They form their inhibitory synapses on eurydendroid cells, which constitute the major output of the zebrafish cerebellum. How the activity pattern of the eurydendroid cells is affected due to the presence of Purkinje neurons in either states is not known. Many Purkinje neurons converge on single eurydendroid cell, making it difficult to study the eurydendroid cell response due to single Purkinje activity through direct electrophysiology. To overcome this, CA8-cfos:ChR2(H134R)-mcherry plasmid was constructed to optogenetically activate a population of Purkinje neurons. CA8, a Purkinje neuron specific promoter along with cfos enhancer element was cloned upstream of channelrhodopsin protein. Channelrhodopsin is a mixed cation permeable channel which gets activated on stimulation of light. This protein was fused with mcherry fluorescent tag. The plasmid expression was verified in the Purkinje neurons of the zebrafish. This constructed plasmid will facilitate studying the effect of Purkinje neuronal states on eurydendroid cells by employing electrophysiological techniques and optogenetics, and thereby assist in understanding how the Purkinje and the eurydendroid cells together shape the output of the cerebellum.

Tools used (Development tools - H/w, S/w): Electrophysiology, Microinjection, Optogenetics

Objectives of the project: ¢ Construction of CA8:ChR2-mcherry plasmid ¢ Microinject constructed plasmid in zebrafish larvae. ¢ Screen microinjected zebrafish for mcherry expression. ¢ Grow transgenic line of zebrafish with CA8:ChR2-mcherry germline expression. ¢ Select light source for activation of ChR2 in 7dpf zebrafish

Outcomes of the project: Successful construction of CA8:ChR2-mcherry

Major Learning Outcomes: Learned techniques of zebrafish dissection, microinjection, cloning, electrophysiology

Brief Description of working environment, expectations from the company: Individuals get assigned to an ongoing project in the lab. The working hours are flexible. It is the individual's responsibility to strive and finish the project. You get to interact with the lab members of own and various other labs in lab meets, journal clubs, talks. NCBS provides with excellent exposure in research. It is the best platform to discover various research fields in biology and interdisciplinary biology.

Academic courses relevant to the project: Animal Physiology, Recombinant DNA technology

Name: MUDRIKA SINGHAL (2013B1A10245P)

Student Write-up

Short Summary of work done during PS-II: I worked in the Department of Chemical Ecology under the guidance of Dr. Radhika Venkatesan. My project focused on interactions taking place between three trophic levels viz. the host plant, the herbivore and the parasitoid. We studied the factors affecting the interactions taking place between these trophic levels.

Tools used (Development tools - H/w, S/w): Tools used included micropipettes, light microscope, fluorescence microscopy and a basic introduction to confocal microscopy. In the software, we used basic tools such as plotting of graphs in excel & fiji was used for editing of images.

Objectives of the project: The main objective was to study whether the host plant affects the interaction taking place between the herbivore and the parasitoid. Also, whether the host plant affected the life cycle of the herbivore and the defence level.

Outcomes of the project: It was observed that host plant affects the life cycle of the herbivore in terms of oviposition and larval fitness. Also, the % parasitization of the herbivore by the parasitoid is affected by the host plant on which it is reared.

Major Learning Outcomes: It can be concluded that host plant affects the interaction between the herbivore and the parasitoid. Hence, it can be said that three trophic levels are interrelated to each other.

Brief Description of working environment, expectations from the company: Apart from that, there are various seminars and lecture series going on, which help you to know more about latest discoveries in Science and an opportunity to meet great scientists from all over the world.

Academic courses relevant to the project: Microbiology, Genetic Engineering Techniques, Plant Physiology and Ecology.

PS-II Station: Pluss Advanced Technologies Pvt. Ltd., Gurgaon

Student

Name: BANSI MAHENDRA BHAI KAMANI Kamani (2013A1PS0679H)

Student Write-up

Short Summary of work done during PS-II: Phase change emulsions

Tools used (Development tools - H/w, S/w): Homogeniser

Objectives of the project: To make stable emulsion

Outcomes of the project: Stable emulsions formed using phase change materials

Major Learning Outcomes: Most stable emulsions formed

Brief Description of working environment, expectations from the company: Very friendly but lack professionalism.

Academic courses relevant to the project: Colloidal surface chemistry

Name: SHIKHAR WADHWA (2013B2A30899G)

Student Write-up

Short Summary of work done during PS-II: I was part of the marketing team at PlussAdvanced and my work was to do market surveys for new products in the PCM division as well as find and contact potential customers. My project was specifically based on Eutectic plates, which are being developed by Pluss and find about their viability in the market and contact new customers. I helped in some technical work, which was to automate T-history calculations in MATLAB, which makes life easier for the R&D team and the software may also be bundled as a product.

Tools used (Development tools - H/w, S/w): Excel, MATLAB

Objectives of the project: To survey the market and bring in new customers for Eutectic plates.

Outcomes of the project: Analysis of the cold chain industry and new partnerships with Pluss

Major Learning Outcomes: Working of the cold chain industry as well as skills such as marketing.

Brief Description of working environment, expectations from the company: The work environment is pretty relaxed. There is no major hierarchy and anyone can approach anyone else. The management is very competent and are able leaders.

Academic courses relevant to the project: None

PS-II Station: Shell Technology Center, Bangalore

Student

Name: PARTH BHANDAKKAR (2014A1PS0544G)

Student Write-up

Short Summary of work done during PS-II: My project in SHELL was based on an ongoing project of the Major Hazards Team of STCB related to Bukom Refinery, Singapore which is the largest wholly owned refinery of SHELL globally. Since Bukom refinery deals with a large production of various chemicals on a daily basis, there is a significant chemical hazard risk (Major Hazard) associated with the refinery.

My team™s job was to ensure that the safest measures were being followed, and the extent of damage and fatalities was minimized in the case of an undesirable industrial accident at Bukom with the help of modelling and simulation softwares to examine the extent of various consequences possible.

I was basically being given various extensive tasks related to consequence modelling and hazard analysis using the on-site data, which was obtained via the on-site team, like the calculation of various

parameters for a probability of an explosion, dispersion in case of leak etc, keeping in mind that I had to be as conservative in my approach, as possible.

The project also involved the use of various consequence modelling softwares for the calculation of the required parameters.

Tools used (Development tools - H/w, S/w): S/W- SHELL FRED and SHELL Shepherd

Objectives of the project: Major Hazards Identification, QRA and Consequence Analysis for 'Bukom' Refinery- Singapore

Outcomes of the project: Learning about consequence identification, modelling, hazard and risk assessment and about how various safety related measures are designed in a Chemical refinery. Softwares called FRED and SHEPHERD- understanding the concepts used in designing of the software and eventually using the software for the determination of parameters like- Type of consequence possible, volume of plume/ pool formed, dimensions of plume, fatality contours etc.

Major Learning Outcomes: How to Perform QRA analysis for a refinery.

Brief Description of working environment, expectations from the company: Working hours were from 8am - 4:30pm (M-F). The team was very rich in terms of academic experience and knowledge. Discussions were heavily based on the work which the team performed from time to time. The company treats its employees with respect. It ensures that the safest measures were being followed by the students at the company. Lunch, transport provided free of cost. The company expects the task assigned to be completed within the stipulated time, which I was always able to ensure. Overall- a great company for Chemical Engineering students.

Academic courses relevant to the project: Process Plant Safety elective (very important for this project), Process Design Principles I&II, Fluid Mechanics, Numerical Methods for Chemical Engineers, Transport Phenomena

Name: RAHUL Ghattamaneni (2014A1PS0565H)

Student Write-up

Short Summary of work done during PS-II: I worked on a research project relating to direct electrochemical synthesis of hydrogen peroxide via water electrolysis. I looked at various electrocatalysts which can be used as working electrodes to divert the anodic product from normally formed product (oxygen) to hydrogen peroxide and also did some experiments to find the mechanism due to which such catalysis occurs. Also, I did some work in Atomic Force Microscopy (AFM) to gain general understanding of the instrument with the objective of building an analytical capability for surface analysis.

Tools used (Development tools - H/w, S/w): General electrochemistry cell setup, Potentiometric Titration, AFM, AFM image analysis software's, etc.

Objectives of the project: Screening electrocatalysts for direct electrochemical H₂O₂ production and building capability of AFM as an analytical instrument for surface analysis.

Outcomes of the project: I found a few electrocatalysts for the above mentioned application and calculated efficiency of the screened catalysts and got some results which indicate probable mechanism by which catalysis occurs. Also, I carried an extensive literature review on the working of AFM as well as carried out experiments on a number of surfaces to gain understanding of the instrument.

Major Learning Outcomes: Experience in practical electrochemistry, Operation of AFM and a good theoretical understanding of how the instrument works.

Brief Description of working environment, expectations from the company: Working hours were from 8am - 4:30pm (M-F). The team was very rich in terms of academic experience and knowledge. Discussions were heavily based on the work which the team performed from time to time. The company treats its employees with respect. It ensures that the safest measures were being followed by the students at the company. Lunch, transport provided free of cost. The company expects the task assigned to be completed within the stipulated time, which I was always able to ensure. Overall- a great company for Chemical Engineering students!

Academic courses relevant to the project: I am a chemical engineer but the project was related to physical chemistry, nano science etc. [No specific Academic course]

PS-II Station: SKF India Ltd., Ahmedabad

Student

Name: VIPUL SAINI (2012A8PS0400G)

Student Write-up

Short Summary of work done during PS-II: we implemented a web base real time machine monitoring system

Tools used (Development tools - H/w, S/w): full stack (front end+back end)

Objectives of the project: real time web based monitoring

Outcomes of the project: machine monitoring

Major Learning Outcomes: software skills

Brief Description of working environment, expectations from the company: good environment

Academic courses relevant to the project: computer programming

PS-II Station: SKF India Ltd., Bangalore

Student

Name: MANU C (2014A4PS0097G)

Student Write-up

Short Summary of work done during PS-II: Worked on an inventory management system called kanban system. Along with that worked various organization specific projects on 5S, Defined work and ring traceability

Tools used (Development tools - H/w, S/w): MS EXCEL

Objectives of the project: To implement an inventory management system called kanban

Outcomes of the project: Successfully calculated all the inventory levels, kanban cards and boards are made for the same.

Major Learning Outcomes: Gained more insight into supply chain management and lean manufacturing

Brief Description of working environment, expectations from the company: Work culture very good, managers are very friendly and supportive but will take some time to get used to the factory environment

Academic courses relevant to the project: Supply chain management

PS-II Station: SKF India Ltd., Pune

Student

Name: AKUL GOUTHAM I (2014A4PS0326P)

Student Write-up

Short Summary of work done during PS-II: The work at SKF Pune factory is not just focused on the project assigned to you. Depending on the efforts you put in, you get work from various mentors and this really helps in learning a lot more. Apart from my project, I have worked on analysing process capabilities, helped in conducting a Rolled Throughput Yield Study, helped in designing a clamping Collet for honing process and also worked on an assignment to reduce the ovality of the bearings of a particular type. The more enthusiastic you are to learn, the better the experience would be.

Tools used (Development tools - H/w, S/w): Minitab, AutoCAD, SolidWorks.

Objectives of the project: To setup a new assembly Channel for a special type of bearing, Super Precision Bearing (SuPB) and to also increase the yield of the process

Outcomes of the project: Yield improvement

Major Learning Outcomes: Use of the software 'MINITAB', to analyse process capabilities. Hands-on experience in handling and operating a new machine. Was involved in creating the Control plan, FMEA for the new machine. More detailed understanding of processes involved in Bearings manufacturing. Implementation of Lean practices. Leadership skills, to lead and handle various trials taken during the course of the project.

Brief Description of working environment, expectations from the company: The working environment is really good. The company provides you with a lot of freedom, to move around the factory and they are ready to clear your doubts. Company just expects us to be punctual and give our full dedication to every task we are assigned. There is a lot to learn and as interns, we just need to be enthusiastic about it.

Academic courses relevant to the project: Quality Control Assurance and Reliability, Lean Manufacturing

Name: SOURABH SINGH PANWAR (2014A4PS0012P)

Student Write-up

Short Summary of work done during PS-II: I started my internship on 4th July and I got a project on SKF Production System Maintenance Excellence under maintenance department. Initially I have given some ppts so that I can go through them and understand how everything works in maintenance department. My project consists of three different phases, each one of them further divided into small steps and the outcome of the project is to improve the key performance indicators of all A class machines and pilot channel. I worked as a bridge between the project and my mentor and helped him in each phase and in each step in the best possible way. I used to collect all the data for KPI's month wise from the software used by maintenance department and analyze it. In the end we calculated the overall improvement in all six month and tried to analyze it. During my internship I got certification for lean six sigma white belt. Apart from the project i have done small projects on various channels and under different mentors which proved to be a very good learning experience. we used to take trials of 125 or 150 bearings on different channels to find out the capability of machines. we worked on a Ovality project aimed to reduce down the ovality as required by the customers so we took 200 readings after heat treatment, rough grinding and finish grinding to find out which process causes the ovality problem. For auto pairing

machine we wanted to figure out the effect of different parameters on friction torque so three different times we took 125 readings of stand out for both cup and cone and tried to develop a relation between friction torque and other parameters. Under Mohan Pandit sir we performed zero lost study on one of the channels and calculated First Time Yield (FYI) and Roll Time yield (RTY). In the end I presented my project to company and my PS faculty and got the certification.

Tools used (Development tools - H/w, S/w): CMMS, FTM, Minitab, MS Word

Objectives of the project: 30% improvement in KPI's of all A class machines and pilot channel. spare parts optimization. Maintenance cost reduction.

Outcomes of the project: After the implementation of the second phase of SPS we have got desired results but still there are some fluctuation in some of the machines' KPI which will be reduce down to achieve the target result with the help of third phase which is a continuous improvement phase.

Major Learning Outcomes: There is a lot to learn in this organization. During my project I learnt how to handle data and how to analyze it. I learnt the software CMMS and FTM which is used by maintenance department to extract data.

During process capability analyses we got familiar to Minitab.

Gained a basic knowledge of lean six sigma and got white belt.

Brief Description of working environment, expectations from the company: T This company carries a very big brand name and working environment also matches that level.

The conversation gap between different department in this company doesn't exist here.

The best thing which I like about the working culture in this organization is that you are not restricted to only your project mentor, anybody can ask you for help and there comes the chance to enhance your learning

Academic courses relevant to the project: This project related to the professional work of the host origination so mostly it is irrelevant to the academic courses.

PS-II Station: Skoda Auto India Pvt. Ltd., Mumbai

Student

Name: T SAI SRI PRIYANKA Tumuluri (2013B1A40448H)

Student Write-up

Short Summary of work done during PS-II: My department was PR & Communications. The job included Content development, development and execution of communication plans and press events and maintaining effective media relations

Tools used (Development tools - H/w, S/w): Soft skills, writing skills and working as a team.

Objectives of the project: To maintain brand reputation.

Outcomes of the project: Presentation of relevant concerns to top management, content development, etc.

Major Learning Outcomes: Effective communication skills and writing skills.

Brief Description of working environment, expectations from the company: The working environment is great. Provides ample opportunities to interact with all departments. Working hours are good.

Academic courses relevant to the project: Automotive Technology

Name: PRANAV RATHOD (2014ABPS0890H)

Student Write-up

Short Summary of work done during PS-II: Worked under the all India customer care head at Skoda. Regular tracking of customer concerns and answering their problems. Providing the best aftersales service solutions. Root Cause analysis to understand the fundamental reasons for failure and to rectify them. Reporting of highly escalated concerns to Skoda HQ in Czech Republic. Tracking the turn around time for escalated concerns and monitoring social media complaints. In conclusion, focussed towards maintaining good relations with our customers and providing the highest level of customer satisfaction.

Tools used (Development tools - H/w, S/w): Software- MS Excel

Objectives of the project: Monitoring and Analysis of Customer Concerns

Outcomes of the project: Decrease in the number of concerns and their turn around time

Major Learning Outcomes: Excel, Presentation skills, communication skills, attention to detail

Brief Description of working environment, expectations from the company: Great working environment. Very helpful and supporting employees. Company expects a lot of backend work completion by interns. Regular tracking and monitoring, report generation, monitor updation, etc. Good experience of corporate culture. Could provide interns with better and faster laptops for more efficient work.

Name: MINNA Gupta (2014ABPS0737H)

Student Write-up

Short Summary of work done during PS-II: Work involved monitoring of EA-189 campaign, auditing of goodwill claims, Software testing and Making trackers for campaigns. Work is mostly excel based.

Tools used (Development tools - H/w, S/w): Microsoft excel involving pivot tables, slicers, Vba

Objectives of the project: To optimise the penetration of EA-189 campaign

Outcomes of the project: Testing Of softwares removed glitches and bugs, campaign penetration increased.

Major Learning Outcomes: Effective communication skills, importance of aftersales department, representation of useful data from large dump.

Brief Description of working environment, expectations from the company: Environment is very friendly. Company expects more innovations in work from young interns.

Academic courses relevant to the project: Effective public speaking

PS-II Station: Structural Engineering Research Centre, Chennai

Student

Name: VENKAT ASHRITH J R Jutoor (2014A2PS0293P)

Student Write-up

Short Summary of work done during PS-II: In the present world, accurate sensing of damage plays a huge role in safe guarding the health of the building and the lives of people who are using that building. This health is detected using the responses of the building when excited and how different it is with respect to what one observes when the building is perfectly health. However, this is a very difficult process since the building undergoes a lot of changes in it's response because of environmental and operational variations. Our project hence was to devise and test new methods for detecting damage in buildings from acceleration response on MATLAB. The devised methods were even tested for a few benchmarks, these also showed good results. To facilitate the process of damage detection, it is uneconomical and inaccurate to use sensors all over the building and hence the process of sub-structuring was done so that the sensing can be just confined to one region and the damage in the building can be detected using limited sensors. Using substructuring and concepts like Gaussian Process, Random Forests, Locally Linear Embedding and Symbolic Data series different methods were devised.

Tools used (Development tools - H/w, S/w): MATLAB 2016b

Objectives of the project: To innovate new methods to detect and localize damage in buildings and bridges in presence of environmental and operational variations

Outcomes of the project: Analytical methods to detect damages in beams buildings and bridges

Major Learning Outcomes: Other than strengthening concepts in structural dynamics and finite element methods, Learned basics of Machine Learning and Signal Processing

Brief Description of working environment, expectations from the company: SERC being a research facility has many divisions which have divided according to area of concentration. There are divisions like Structural Health Monitoring, Materials, Wind Engineering, Steel Structures, Earthquake. After a week of exploring we decided to do our project in SHM. This was an analytical project and hence did not have any experimental procedures to go through.

Academic courses relevant to the project: Finite Element Method, Structural Dynamics, Earthquake Res Design and Construction

Name: PRATEEK ARORA (2014A2PS0556P)

Student Write-up

Short Summary of work done during PS-II: The field of Structural Health Monitoring, in structural engineering field, is gaining strong attention for evaluating damage and maintaining the structural integrity of the civil engineering structures over its service life against the natural hazards such as strong winds and earthquakes of high magnitude. The cracks which are initially invisible to eyes can be disastrous leading to catastrophic failure of the whole structure. This can place the lives of many people at risk. The continuous monitoring of structures is required to detect the damage in the structure at an early stage. In the project, a novel approach was developed for the damage identification and localization for a beam and a shear building by employing the process of substructuring using auto regressive models, frequency response functions and finally localized damage location is indicated the form of Damage Index. This project also covered the use of robust regression methods to account for the uncertainties (Environmental variability, noise, and temperature) in the data acquired for the damage identification of a structure. This project also dealt with the damage localization in a beam based on the spectral diffusion mapping and fractal dimension. The fractal dimension developed for the

beam also employed to find the damage location in the plate structure. The developed methods are data driven as it does not require to know the initial stage of the structure. The robust methods can detect damage precisely.

Tools used (Development tools - H/w, S/w): MATLAB

Objectives of the project: Development of robust methods for damage identification and localization of damage in the structure

Outcomes of the project: The robust methods to detect damage in the beam and the plate structure were developed. The novel approach can detect the damage very precisely. Moreover, the new techniques are able to identify damage in the structure even with a signal to noise ratio of 30. This aids to overcome the continuous change in the working and environment condition in vicinity of the structure.

Major Learning Outcomes: The project was multi-disciplinary, a person needs to have sound knowledge of structural analysis as well as mathematics. Through the project, I learned to use the Machine learning for damage identification. The project involved the extensive use of Numerical Methods and Computer Programming which was new to me, however I learned the new techniques to apply for the project.

Details of papers/patents: Paper on damage identification techniques currently under review.

Brief Description of working environment, expectations from the company: The project was research-based, so one needs to work in a silent environment to work. The environment of Structural Engineering Research Centre, is perfectly what a researcher requires. I worked in the Structural Health Monitoring Laboratory, the laboratory is equipped with high-speed processing computers which are essential for computational simulations. The people in the lab were very interactive which results in new and creative ideas. The regular interaction with scientist always intrigued me to go one step ahead to get the best outcomes. There were times when I just reached the dead-end in the project not seeing any progress but a discussion with the scientist and the Ph.D. students in the laboratory always helped to think a new way out to solve the problem. The Scientists of Structural Engineering Research Center currently having a lot of ideas and projects, a student can work on these projects. This not only helps a student to gain knowledge but also develops a culture of research. Working at SERC, I found a new zeal to work in the area of Research and Development.

Academic courses relevant to the project: Introduction to Finite Element Methods, Numerical Analysis, Structural Dynamics, Probability and Statistics, Analysis of Structures, Computer Programming

PS-II Station: Synergiz Global, Hyderabad

Student

Name: MAYUR GUPTA (2014A2PS0580P)

Student Write-up

Short Summary of work done during PS-II: In the span of last 5.5 months in the company I have acquired a basic knowledge about the scheduling and monitoring of the activities that are followed during a civil project. Developing a schedule and to follow up on the progress and monitoring of large project is one of the important aspect in terms of reducing indirect extra cost due to delay in the activities or any volatile market change. Scheduling and monitoring helps in taking important decisions in order to minimize the time and the cost during a civil project. Primavera and tableau are one of the most important tools I have learnt over the course of my internship.

Tools used (Development tools - H/w, S/w): Tableau, Excel, Primavera

Objectives of the project: To learn gain basic knowledge of scheduling, monitoring and management

Outcomes of the project: Creating schedules, WBS and dashboards

Major Learning Outcomes: Primavera is one of the major learning outcome of the internship

Brief Description of working environment, expectations from the company: The office here in Hyderabad is a corporate office with 10-15 members working here. The staff is very friendly and the manager itself is very down to earth. Getting stuck regarding anything with work is not at all a problem because mentors are always there to help us out. Overall working environment is ideal to work.

Academic courses relevant to the project: CE F242

PS-II Station: Tata Autocomp Systems Ltd., Pune

Student

Name: MOHAMMED PAHADWALA (2014A4PS0416P)

Student Write-up

Short Summary of work done during PS-II: The company had business in truck suspension systems, both auxiliary and main suspensions. The department which I was assigned was R&D. The work included performing stress analysis in yield as well as fatigue cases on ANSYS as well as other tools.

Tools used (Development tools - H/w, S/w): ANSYS, FESAFE, Solidworks, Creo, ADAMS

Objectives of the project: To assist in development of 6-rod bogie suspension by performing FEA.

Outcomes of the project: Finalized some parts of the suspension as the project was too big to finish in the given time.

Major Learning Outcomes: Industrial insights on what exactly R&D means in Indian Scenario.

Brief Description of working environment, expectations from the company: The workplace was a good well developed office with all tools including destructive testing equipment for use. The people were

friendly and happy to assist in any difficulty. They care of your insights and do make you feel as an active participant.

Academic courses relevant to the project: MDD, Mechanics of Solids

Name: VIVEK PRAKASH (2014ABPS0498P)

Student Write-up

Short Summary of work done during PS-II: This project basically aims to create a database for all information related to injection moulded parts. This would later be applied to other parts like blow moulded parts, painted parts, etc. This database would contain real time transforming data due to changes brought about by change in RM rates, taxation, brought-out parts rates, machine tonnage, etc. This database would also assist in making various decisions regarding the supply chain activities such as vendor rationalisation, vendor selection, PO revision, etc. The information relating to the moulded parts would come from several sources such as the costing sheets, purchase order data, info record data, spend data, etc. The aim is to link the contents of the master database to these individual sources so that any change in the source data would be automatically captured in the database with minimal human effort and increased accuracy. Also, the final goal is to upload this data onto the existing SAP System so that it could be used by all TATA Autocomp Systems branches around the country.

Tools used (Development tools - H/w, S/w): MS Excel

Objectives of the project: Revising the existing cost sheet template, New part costing and rate revision on the new master cost sheet, Creation of master cost sheet, Decision making such as vendor rationalization, bill to ship to transactions, etc.

Outcomes of the project:

- 1) To increase efficiency, accuracy and ease of data transfer
- 2) To make better informed decisions by analysing the master cost sheet data
- 3) Easing the process of revision of moulded part prices due to changes in RM, BOP, transport rates, etc
- 4) To achieve more accurate costing of moulded part
- 5) Implement Bill to Ship to transaction
- 6) Reduce the total number of suppliers (vendor rationalisation)

Major Learning Outcomes: 1) Process of injection moulding 2) Costing of moulded parts 3) Working of manufacturer/supplier stage of the supply chain 4) Data crunching on MS Excel 5) Concepts of vendor rationalisation, bill to - ship to transactions, etc 6) Quality Control and Certifications

Brief Description of working environment, expectations from the company: Working environment as well as work culture aren't very good. Toxic Environment. People either working or screaming all the time. 6 day 10 hour work week means that it's difficult to balance work and home, according to employees. Company didn't really care much about my project. I could have achieved nothing and they'd still not realize.

Academic courses relevant to the project: Supply Chain Management, Production Planning and Control

Name: PRABHSIMRAN SINGH (2014ABPS0662P)

Student Write-up

Short Summary of work done during PS-II: The project involves a comprehensive study of procurement process of the Central Purchase Department of TACO. All the projects of CP follow a strict or flexible timeline depending on the type of Project. Main work involved preparing RFQ Documents, coordinating with Suppliers in techno-commercial meetings, preparing Quote Comparison sheet, analyzing quotes and preparing Target letters, which would all potentially lead to cost savings.

Tools used (Development tools - H/w, S/w): Softwares (Excel ppt word pdf)

Objectives of the project: Sourcing and Cost Savings project on various tooling requirements

Outcomes of the project: Sourcing and Cost Savings project on various tooling requirements

Major Learning Outcomes: Understood various parts of an automobile through projects and their function. Learned about various documentations involved in purchase process e.g. RFQ, Quote Comparisons, Quote Analysis, etc. Introduced to commercial negotiations Microsoft Excel and its applications Gained Commercial skills

Brief Description of working environment, expectations from the company: Tata AutoComp Systems Limited, Pune Familiarized me with typical purchase process and activities of Central Purchase Unit.

Understood general terms and conditions in a quote and their importance. Soft skills and various meeting etiquettes. Gained Commercial skills.

Academic courses relevant to the project: Supply Chain Management

PS-II Station: Tata Chemical Innovation Center, Pune

Student

Name: PAKKI PREMKIRAN Rao (2014A1PS0494P)

Student Write-up

Short Summary of work done during PS-II: Synthesis of PVA-Silica, PVA-PVDF-Silica membranes and Scale up of a Fuel Cell stack from 1 cell to 6 cell than to 15 cell stack by optimizing the operating conditions.

Tools used (Development tools - H/w, S/w): Fuel Cell Test Station

Objectives of the project: Synthesis of Hybrid oxide membrane for PEMFC

Outcomes of the project: Synthesized of PVA-Silica, PVA-PVDF-Silica membranes and Scaled up of a Fuel Cell stack from 1 cell to 6 cell than to 15 cell stack

Major Learning Outcomes: Learned the Industrial scenario of Fuel Cells

Brief Description of working environment, expectations from the company: The Company culture was very good, they have a special month called ethics month in which they have talks on professional ethics.

Academic courses relevant to the project: BITS F429 Nanotechnology for Renewable Energy and Environment

Name: SALAHUDDIN MD Sharib (2014A1PS0619P)

Student Write-up

Short Summary of work done during PS-II: The work to be done was to successfully synthesize and characterize silane functionalized carbon silica for tyres. It first involved reading through a lot of papers and patents to figure what needed to be done. Then modify the existing method accordingly so that the end result could be achieved. A lab scale reaction had to be set up and several iterations of the same reaction had to be done to test for repeatability and versatility. Once the reactions were done they were initially characterized using an FTIR and TGA.

Tools used (Development tools - H/w, S/w): Centrifuge, FTIR, TGA, Moisture analyser, Particle size analyser, Filter plate press (h/w), OriginPro, OPUS (s/w)

Objectives of the project: Synthesis and characterization of silane functionalised carbon silica composites for tyres

Outcomes of the project: Was successfully able to synthesise and characterise silane functionalised carbon silica composites using FTIR and TGA

Major Learning Outcomes: Learnt how to read patents, silica chemistry, silane chemistry, silica-silane chemistry, silica reaction dynamics, operate a centrifuge, operate an FTIR, operate a TGA

Brief Description of working environment, expectations from the company: Working environment is great. The environment, which are basically labs, in itself is very conducive and people are very helpful. We were allotted separate rooms and PCs to work and research upon. Work needed to be done in labs which are according to the industry standards.

The company expects interns to follow the same rules and regulations as it expects from its employees. They handle work such that a person is motivated to complete the project by themselves.

Name: VIPUL SHARMA (2014A1PS0607P)

Student Write-up

Short Summary of work done during PS-II: Magadi Trona is a non-marine evaporite mineral containing high concentrations of Sodium Carbonate and Sodium Bicarbonate. It is refined into ore and reduced in size to create crushed refined soda or CRS. Traditionally sodium bicarbonate is produced by carbonation of synthetic sodium carbonate of soda ash. The CRS obtained by processing Magadi Trona contains large amount of sodium bicarbonate and sodium carbonate and is very cheap as a raw material hence it would prove very economical to produce sodium bicarbonate from CRS. The primary need for this project is that model development and process optimization is not done for sodium bicarbonate production from Magadi Trona. The aim of this project is to model and optimize process parameters which utilize the CRS to produce sodium bicarbonate and to control its quality.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Modelling and optimization of Sodium Bicarbonate production from Magadi Trona ore based on the process equations and literature present in patent as well as in open libraries.

Outcomes of the project: Optimized results were found mathematically and tested experimentally

Major Learning Outcomes: Mathematical understanding of the reaction and experimental research

Brief Description of working environment, expectations from the company: Good environment, Great mentors(Scientists) and helpful people, great chances of learning new skills.

Academic courses relevant to the project: Engineering Chemistry, Kinetics and reactor design, thermodynamics

PS-II Station: Tata Motors Ltd., Jamshedpur

Faculty

Name: Arun Maity

Comments: Expectations from industry: Tata Motors, Jamshedpur projects are related to World Class Quality. Hence students should be aware of Quality Management tools and techniques and knowledge about Industrial Engineering.

Student

Name: SHUBHAM Choudhari (2013B4A40471P)

Student Write-up

Short Summary of work done during PS-II: Mapping of Press Specifications at Suppliers End and Automation Of Manual Processes at the same

Tools used (Development tools - H/w, S/w): M/S Excel, SAP, CAD

Objectives of the project: Ease in Production and Maintenance of dies at CTR division

Outcomes of the project: Ease in Production and Maintenance of dies at CTR division

Major Learning Outcomes: Learning about the processes and the product flow from the Suppliers end to the company and vice versa.

Brief Description of working environment, expectations from the company: Work environment is really safe and pleasant at the Tata Motors but working hours and the leaves are not so flexible.

Academic courses relevant to the project: Supply Chain Management, Production Techniques.

Name: GIRI VAMSI BHOGADI (2014ABPS628H)

Student Write-up

Short Summary of work done during PS-II: Productivity Improvement using TMPS guidelines

Tools used (Development tools - H/w, S/w): MOST

Objectives of the project: Improve MOP

Outcomes of the project: Increased MOP

Major Learning Outcomes: Industrial engineering terms

Brief Description of working environment, expectations from the company: Great working environment inside the company.

Academic courses relevant to the project: Quality Control, Lean Manufacturing, PPC

Name: VARUN MIKKILINENI (2014A4PS0077G)

Student Write-up

Short Summary of work done during PS-II: Worked at 5000T press shop of Frame factory where long members were made. Worked majorly on Office tools such as Excel and PowerPoint. Had to introduce a new tool management system to reduce complexity while preparing die for 5000T press. Used CATIA for hole details in long members. Worked on Product Lifecycle Management software to retrieve data of long member stocks, weights and various other properties which were compiled to form the Tool Management System.

Tools used (Development tools - H/w, S/w): MS Office, CATIA, Product Lifecycle Management, SAP

Objectives of the project: Reducing complexity in 5000 T shop of Frame Factory

Outcomes of the project: Prepared a Tool Management System

Major Learning Outcomes: Enhanced technical understanding and improved presentation skills

Academic courses relevant to the project: Supply chain management, Production Planning and Control, Production Techniques

Name: SACHIN KUMAR KIRAN (2014ABPS0837P)

Student Write-up

Short Summary of work done during PS-II: My workplace was located in the world truck factory in the signa trim line. The project was to improve the productivity of the signa trucks from 40/shift to 60/shift. Firstly, trim line study was done in which various operations done at various stations was seen and noted down. Then time study was done wherein time taken to complete each operation was noted down and workers associated with each job was also noted. Then operations which took more time than the new takt time was pointed out and those operations were proposed to be done on different stations. stoppage time was noted down in which result showed that on an average the line stopped for around 15 minutes every hour. This mainly occurred at 37th station where the cab is taken to the under body station.

This was the overview of the work done by me during ps2.

Tools used (Development tools - H/w, S/w): Stopwatch analysis. Excel. Scatter plot.

Objectives of the project: Line balancing and productivity improvement of signa trim line from 40/shift to 60/shift.

Outcomes of the project: Target achieved on paper. Few suggestions are being carried out. Like roof harness fitment before trim line starts.

Major Learning Outcomes: About how time study is done to improve productivity. Work force balancing and removing excess of workforce, if any. Work culture and work environment.

Brief Description of working environment, expectations from the company: There is not much stress but again no motivation to do the job. More often than not, workers are called even on holidays to meet the demand which is quite harsh considering six days of work every week. Again the pay difference in the finance or it sector companies compared to the core companies is something that has to be dealt in bigger scenario. What i expect from the company is to improve the work culture in the company. Workers should feel motivated enough to work and they shouldn't feel like getting less pay compared to their compatriots working in finance or it sector. Some kind of incentives for performances in the work may give the workforce some drive to work.

Academic courses relevant to the project: Lean manufacturing, supply chain management, sustainable manufacturing

Name: MANEESH KUMAR REDDY MUNUKURU (2014ABPS0709H)

Student Write-up

Short Summary of work done during PS-II: Conducted workshops to generate ideas to reduce DMC of vehicles, process and get these ideas Accepted or rejected by a jury of technical and marketing experts. To successfully implement these accepted ideas faster and file for savings certification from the finance dept.

Tools used (Development tools - H/w, S/w): Classical VA/VE, Horizontal deployment, SAP, Excel, Benchmarking methods.

Objectives of the project: To reduce the DMC of the vehicles.

Outcomes of the project: an avg of 20% reduction in the DMC

Major Learning Outcomes: Value engineering, relating to the concepts learned before in practice.

Brief Description of working environment, expectations from the company: There is a lot of good learning in this place, growth chances are very slow.

My expectation based on the project description was that my project would involve me working primarily on team-based projects and interacting with all kinds of people. The work culture is good and the most enjoyable part of the job is that good colleagues so working environment is good

Academic courses relevant to the project: Lean Manufacturing, Manufacturing Management

Name: RONIT KHATUA (2014A4PS0325P)

Student Write-up

Short Summary of work done during PS-II: The project is related to the analysis & preparation of Process sheets & Process flow diagrams for a range of truck models in fully built vehicle area. In fully built vehicle area, the chassis frames are mounted with load body or troop carriers. There are several

models of trucks and load bodies and it is important to keep process sheets and process flow diagrams for every model as they give detailed information and sequence of processes taking place in the mounting of the bodies. In short it is about collecting information from the shop floor, understanding the working and compiling it.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Part numbers and Vehicle combination number lists for different models of trucks.

Objectives of the project: To make process sheets and process flow diagrams of load body mounting for a range of truck models.

Outcomes of the project: Process sheets and PFDs are complete for about 8 truck models.

Major Learning Outcomes: Working of Hydraulics in tipper bodies, Assembly of the load body on the frame and knowledge about several parts used in the entire process.

Brief Description of working environment, expectations from the company: Well the difficult part is going to the shop floor and collecting data as it takes around 4-5 hrs for a single vehicle to go through all those station processes. The rest of time, you have to spend on compiling the data and working on sheets mainly so it's the easy part. Getting to know about the assembly process and working of different parts is fun but the overall work is boring and they should have given some project where we could use our skills instead of excel sheet work. It's a typical industry job and well they make us work on Sundays when required. We do get holidays on some other day compensating for the Sunday but still sometimes it goes on for 2 weeks at a stretch without offs. There are hardly 10 official holidays in a year and every other holiday even for festivals like Diwali and durga pooja, will be compensated for on Sundays. That is really frustrating. Everything else is fine.

Academic courses relevant to the project: Automotive vehicles

PS-II Station: Tata Motors Ltd., Lucknow

Student

Name: Nischay Bhadu (2013A4PS0265G)

Student Write-up

Short Summary of work done during PS-II: Standardized work can be defined as the currently best-known method for accomplishing the work. This assumes that it is the safest and most efficient method to do the work that meets the required level of quality. This report focuses on application of tools like Standardization Work industry environment of Machined Components Division-I in Bharat Forge Ltd. These tools are applied in the shop floor to increase the productivity.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft Powerpoint

Objectives of the project: Standardization on Matec Line(MCD-I)

Outcomes of the project: Reduced setup time for machines and Prepared Visual Procedure Standard Chart.

Major Learning Outcomes: Implementation of different Manufacturing Techniques mainly Standardization Work

Brief Description of working environment, expectations from the company: The project I did was just the beginning. There will be a lot more projects like these. They are continuously improving their standards and quality, so the scope of work here is huge. All the mentors were very helpful and

explained me everything. I was assigned to take readings from the line and feed all the data to improve and reduce the setup. I enjoyed the work and was very fun to do.

Academic courses relevant to the project: MATERIALS SCIENCE & ENGG

Name: VIDUR MONGA (2013B3AB0604H)

Student Write-up

Short Summary of work done during PS-II: Standardized In depth study of the indirect areas, namely, the Vendor Quality Assurance, the Stores and the Canteen to calculate the actual manpower required for these areas through work standardization using Maynard Operation Sequential Technique or MOST and calculating the potential profit that could be made for the company.

Tools used (Development tools - H/w, S/w): 1. DELMIA Process Engineer 2. Microsoft Excel

Objectives of the project: Optimizing the manpower in indirect areas based on cost, workforce and functional efficiency

Outcomes of the project: Manpower was optimized in three indirect areas through work standardization

Major Learning Outcomes: 1. Technical knowledge of assembly lines. 2. Work standardization 3. Manpower assessment through data analysis 4. Microsoft Excel

Brief Description of working environment, expectations from the company: The working environment in TATA Motors depends upon department to department. The standard shift timings are from 8 AM to 5.30 PM, although the company operates in other shifts for production. The company considers safety as its main motive.

Academic courses relevant to the project: 1. Manufacturing Management, 2. Automotive Technology

Name: NIKHIL JAIN (2013B4A40591G)

Student Write-up

Short Summary of work done during PS-II: The project involves defects analysis according to their severity, prioritising the defects according to pareto analysis, 4W-2H analysis and Why-Why analysis. 4M is used for each defect to get to the most probable source of the defect. The defect reduction increased the DRR. It also involves development of a program for manpower calculation according to daily dropping. The processes critical to quality were validated.

Tools used (Development tools - H/w, S/w): MS Excel

Objectives of the project: Improvement of DRR (direct run rate), shower leakage reduction, standardization, and process validation.

Outcomes of the project: Reduction in Defects leading to increased productivity

Major Learning Outcomes: Defect Analysis, improved decision making

Brief Description of working environment, expectations from the company: People are helping in nature. Work is little boring, but that is the case in all the places I guess.

Academic courses relevant to the project: PPC, SCM, lean manufacturing.

Name: MOHAMED IRFHAN HILALY (2013B2A40705G)

Student Write-up

Short Summary of work done during PS-II: Project 1: Reduction in warranty claims by Analyzing IPTV (incidence per thousand vehicles produced) Trends and resolving root cause of Top defects in Steering, Suspension, Cooling and Exhaust Systems.

Project 2: Productivity and Quality Improvement building and using Quality Assurance Matrix on Assembly line 1 and later for the Entire Lucknow plant.

Tools used (Development tools - H/w, S/w): Microsoft Excel, root cause analysis using a variety of testing machines.

Objectives of the project: Project 1: Reduction in IPTV in 2 subsections, Steering and Suspension Systems and Cooling and Exhaust Systems. Project 2: Building a QA Matrix and resolving Top defects on Assembly

line 1 to reduce incidence of Defects thereby increasing Productivity. Building of QA Plant Matrix to identify worse Process and top defects across the Plant.

Outcomes of the project: Project 1: Resolution of 6 major defects and other minor defects till Permanent corrective Action.

Project 2: Building of QA Matrix for Assembly Line 1, Resolution of 10 top defects by 4M analysis, Building and changing the format of QA Plant Matrix to better serve organization and consumer interests.

Major Learning Outcomes: 1) Increase in Soft skills by interacting with Vendors during Project 1, learning how communication between Vendors and a OEM(Original equipment Manufacturer) works.

2) Systematic methods of resolving any issue by observing and learning how root cause investigation is conducted.

3) Learning how to use Microsoft excel and Building formulae and Macros to help analyze large amounts of Data.

Brief Description of working environment, expectations from the company: There are a couple of Benefits to working here such as free transport and reduced/free Meals (Depending on Quality of Meal, 5 rupees for better meal) during working hours. Expectations and deadlines depend entirely on the Mentor allotted to you. Most projects allotted have an On the Line aspect and working hours and Days vary with Production of Vehicles.

Academic courses relevant to the project: Project was related to organizations production and Quality Control.

Name: Palash Tripathi (2013B5A40446P)

Student Write-up

Short Summary of work done during PS-II: conducting PCP audits to reduce the PPM values at the supplier end

Tools used (Development tools - H/w, S/w): PFMEA, PCP

Objectives of the project: To reduce the PPM value of the suppliers

Outcomes of the project: The ppm value of suppliers got reduced

Major Learning Outcomes: implement what we have studied in college at the industry, learn about six sigma methodology, and how to work in a dense corporate environment

Brief Description of working environment, expectations from the company: expectations from my department in the company was sound technical knowledge of manufacturing processes, and a bit of expertise in quality control and six sigma methodology

Academic courses relevant to the project: quality control and assurance

PS-II Station: Tata Motors Ltd., Pune

Student

Name: Harshal Shah (2014ABPS0870P)

Student Write-up

Short Summary of work done during PS-II: Implementation of Standardised Work Techniques at 2.2L Engine Assembly Line.

Project was basically application lean techniques in real world.

Tools used (Development tools - H/w, S/w): Standardized Work 13 Document, SAP, PLM

Objectives of the project: Improve Productivity & Quality

Outcomes of the project: Increased MOP from 200 to 315

Major Learning Outcomes: SAP, PLM, Man Power Handling.

Brief Description of working environment, expectations from the company: Great People to work with. They are happy to help you if you are interested.

Academic courses relevant to the project: Lean Manufacturing

Name: M Kartik (2014A4PS0468H)

Student Write-up

Short Summary of work done during PS-II: Identifying the top 20 issues faced by customers and making action plans for the same. Warranty failed part analysis for ac vents and clutch cable to rectify the issue.

Objectives of the project: To reduce the JDP IQS score

Outcomes of the project: Took necessary action plans to increase customer satisfaction index.

Major Learning Outcomes: Learnt assembly and working of car parts

Brief Description of working environment, expectations from the company: Working atmosphere is quite dull and gloomy. All the new employees in TATA i.e GET employees curse the company everyday and except a few, GET's are leaving the company in a year or two. Some of the high posting employees care only about numbers but not the work or feasibility in that process. Have to walk long distances to reach shop floor or warranty store hence it involves a lot of physical strain. A person should have interest in automobiles to explore and learn more or else it would be a futile internship.

Academic courses relevant to the project: IC engines, Automotive tech, SCM

Name: JAYESH SABOO (2014A4PS0177G)

Student Write-up

Short Summary of work done during PS-II: I worked in Productivity Services Department for increasing the productivity of assembly lines by calculating the Through put time by MOST (Maynard Operation Sequencing Technique) and reducing the Non Value Added activities and by doing efficient Line Balancing. We balanced lines for 90% productivity. We updated all the Data in Palmsys Software.

Tools used (Development tools - H/w, S/w): Palmsys Software

Objectives of the project: Increase the Measure of Performance(MOP) of assembly lines

Outcomes of the project: Designed the lines for Desired productivity

Major Learning Outcomes: MOST Analysis, Heizunka

Brief Description of working environment, expectations from the company: Working environment is good and there is lot of freedom in execution of our plans. Mentors are very helpful and guided me in our projects.

Academic courses relevant to the project: Production Planning and Control

Name: Ruchir Khandelwal (2014ABPS0884P)

Student Write-up

Short Summary of work done during PS-II: Work done by my team was to detect repetitive failed part replaced under warranty and analyze to find out the root cause out of all the possible causes. After discovering the root cause, it was categorized under Supplier, Dealer or Tata Motors Ltd liability. Appropriate action is taken to prevent similar complaints in the future.

Tools used (Development tools - H/w, S/w): Six Sigma, Structured Problem Solving, Quality Control Story Approach, Solidworks, CATIA, Benchmarking Tools

Objectives of the project: QUALITY CONTROL: WARRANTY ISSUES DETECTION & RESOLUTION FOR MODEL X

Outcomes of the project: Total of 4 top priority issues under warranty were investigated and resolved. This led to reduction in IPTV for company and cost saving. These parts were very essential as customers directly interacted with them, so improvement in these implied improved brand image and product image.

Major Learning Outcomes: 1 Team Work. 2 SPS Approach 3 Six Sigma Utilization 4 Redesigning parts (Softwares) 5 Following Company culture 6 Applying theory learnt for practical use.

Brief Description of working environment, expectations from the company: The staff is very friendly and helpful. The amount of interest you show in the work, is the amount of work you will get in the company. Working environment is strict and disciplined. Since it is a manufacturing plant, the offices are not that up to date (Software systems). There is a set of rules, which needs to be followed, no matter what as safety is their prime concern.

Academic courses relevant to the project: Quality Control & Reassurance, Supply Chain Management, Production Planning & Control, CAD, CAM, Solidworks.

Name: Poorna Sai Muthy (2014A4PS0325H)

Student Write-up

Short Summary of work done during PS-II: Defence Purchase

Tools used (Development tools - H/w, S/w): SAP, PLM

Objectives of the project: Benchmarking Defence data

Outcomes of the project: Cost and Quality bench marked data for defence futuristic projects

Major Learning Outcomes: SAP PLM and Purchase order process

Brief Description of working environment, expectations from the company: Good, not much pressure and easy to learn. But not productive or creative at all

Academic courses relevant to the project: None

Name: N ARVIND (2014ABPS0898P)

Student Write-up

Short Summary of work done during PS-II: Measure of Performance is essentially a Metric which is indicative of the Adeptness and Efficiency of an Automotive Assembly Line and is based on the MOST Study. The Undertaken Investigation comprehensively establishes the Current Status of the H LCV Post Chassis Line™s Functioning and its existent MOP and deliberates exhaustively on the possibilities of Optimizing the MOP of the Line by systematic brainstorming, Empirical Analysis and Understanding the very crux of its inception, The MOST Technique. Eventually, it labels Man-Man Mapping as the most viable recourse after having taken stock of and putting into practice equally gripping resolutions to considerably enhance the MOP of the Line. Thus, promising to Bolster the Efficiency of the Entire Post Chassis LCV Assembly Line and possibly H LCV™s Overall Performance and standing.

Tools used (Development tools - H/w, S/w): Excel, MOST.

Objectives of the project: To Optimize (Increase) the Measure of Performance of a Post-Chassis Automotive Assembly Line.

Outcomes of the project: MOP Increase from 170 to 260 (Maximum of 455)

Major Learning Outcomes: Understanding Production and Functioning of An Automotive Assembly Line Alongside the concomitant skills such as Negotiation and Conflict Management.

Brief Description of working environment, expectations from the company: A Commercial Automotive Assembly Line in congruence with the Indian Automotive Establishment Setup. Alongside, Regular Communications with the Offices of the Business Excellence Services & PSD. Company expects the Students to double up as GET's and contribute significantly to their cause especially by coming up with novel innovations from an Engineering Perspective whilst assigning a Non-Engineering Portfolio for the Internship.

Academic courses relevant to the project: Automotive Vehicles, PPC, Manufacturing Management & Lean Manufacturing. In Sync with Operations Management. No Pre Reqs required to be honest.

Name: Tushar Sharma (2014ABPS0736P)

Student Write-up

Short Summary of work done during PS-II: Standardization of the D3 ICV/HCV chassis assembly line and improvement in the axle alignment and wheel alignment process for the Intermediate and heavy commercial vehicles. Observation of the assembly line and then documentation of the operations being performed. Looking for opportunities for improvement and then suggestions for improvement. Improving the axle alignment during Ubolt tightening by suggesting the appropriate tightening sequence for U-bolt tightening.

Tools used (Development tools - H/w, S/w): Ms Excel, Minitab.

Objectives of the project: Standardization of the D3 Chassis assembly line and wheel alignment process.

Outcomes of the project: Standard process set for the operators in the D3 chassis assembly line and increase in safety standards. Improvement in the out of square values and wheel alignment of the vehicles.

Major Learning Outcomes: Learnt about the assembly of the vehicle from chassis to the final output i.e. finished vehicle. Learned about applications of the lean and six sigma practices in industry.

Brief Description of working environment, expectations from the company: The working place was the shop floor which was very noisy and full of worker and engineers shouting and moving here and there. People in the executive office often shout on each other and the environment is very dull. Expected better treatment for the company employees.

Academic courses relevant to the project: Lean Manufacturing, Automobile Engineering, Quality Control.

Name: Arnab Kumar Panda (2014A4PS0407P)

Student Write-up

Short Summary of work done during PS-II: Tracked walk home failures cases, Found root causes for warranty failed parts - AC compressor and fuel level sensor

Tools used (Development tools - H/w, S/w): Why-Why Analysis, Poka Yoke

Objectives of the project: Analysis of Walk Home Failures and Warranty Failed Parts

Outcomes of the project: Tracked walk home failures cases, Found root causes for warranty failed parts - AC compressor and fuel level sensor

Major Learning Outcomes: Team Work, Root Cause Analysis, Fitment and Testing of various automobile components

Brief Description of working environment, expectations from the company: Very good working environment. All the department persons were very helpful.

Academic courses relevant to the project: Automotive Engineering

Name: Siddhant Makhija (2014A4PS0299G)

Student Write-up

Short Summary of work done during PS-II: Work was related to customer quality wherein the complaints received from customers were analyzed, understood and solutions found for, in collaboration with the engineering team and other related departments.

Tools used (Development tools - H/w, S/w): Excel, PowerPoint

Objectives of the project: Warranty Expense Reduction and a Survey Score Improvement

Outcomes of the project: Resolution of customer complaints in some areas led to improvement of iqs score and reduction of warranty expense

Major Learning Outcomes: Working of company like Tata Motors, Collaborating with teams for resolution of an issue

Brief Description of working environment, expectations from the company: The working environment is not that attractive and most of the students are allotted projects which don't involve much learning. Projects in Research and Engineering department are not given, which if done, will lead to learning experiences for the students.

Academic courses relevant to the project: Automotive Vehicles, SCM, PPC

Name: Vaibhav Shetiya (2014A4PS0325G)

Student Write-up

Short Summary of work done during PS-II: Measure of Performance is essentially a Metric which is indicative of the Adeptness and Efficiency of an Automotive Assembly Line and is based on the MOST Study. The Undertaken Investigation comprehensively establishes the Current Status of the H LCV Post Chassis Line's Functioning and its existent MOP and deliberates exhaustively on the possibilities of Optimizing the MOP of the Line by systematic brainstorming, Empirical Analysis and Understanding the

very crux of its inception, The MOST Technique. Eventually, it labels Man-Man Mapping as the most viable recourse after having taken stock of and putting into practice equally gripping resolutions to considerably enhance the MOP of the Line. Thus, promising to Bolster the Efficiency of the Entire Post Chassis LCV Assembly Line and possibly H LCV™s Overall Performance and standing.

Tools used (Development tools - H/w, S/w): MOST software

Objectives of the project: An Organization™s Robustness is contingent upon the host of divisions that coalesce seamlessly to attain a coterial framework. To be circumspect, Simply the Output or the sales garnered might not be indicative of a firm™s footing and is definitely not a credible metric. More so, such an analysis would act as an impediment often masquerading gaping quandaries which are to be addressed at dispatch. If there were to be such a Performance Metric in the first place, it must have to respect the extensive Activities pursued by the firm often which cannot be analyzed under a single roof so to speak and has to be compartmentalized. Notwithstanding, the said metric must be ideated in such a manner that it could ably compare disparate Workstations and could be also assimilated in order to gather the performance of the firm on the whole. An existent metric which perfectly fits the Description is Measure of Performance. What we strive to achieve is pretty much simple, TATA already gives a leeway of about 240 Minutes. So, we are left with 300 Minutes and even that™s pretty idealistic. 230 cuts out a favourable figure in the BES Grapevine and we somehow have to achieve the lofty target from the existent 170. Or If Not, At least upwards of 200 which in itself seems pretty daunting.

Outcomes of the project: Thus the continuous efforts put on the line had finally been transformed into something which could quantify now. We had developed an action plan by scrutinizing each activity, its work content, cycle time, the operators required and developed an action plan considering all the practical considerations which led to a much appreciable utilization of each underutilized Operator and thus increasing the overall utilization as well. Yes, there were some processes like Load Body placement which had an unusually low 8% utilization but then we had already talked with BES regarding such things which had safety considerations to be inculcated thus leading to an increase in a person employed there. These hiccups taught us to focus on the bigger picture of improving the MOP by man to man mapping rather than looking to satisfy the individual demands of the manufacturing department by increasing the process activity time(which were having almost insignificant effect on MOP) and the BES department (whose guidelines were very impractical to follow). The man to man mapping thus paved us the way to increase the area wise and the overall MOP by analyzing the underutilized workforce at each station by combining two or more of such processes considering the feasibility, tact time, workstation

difference among a few. Getting acquainted with these processes by spending considerable amount of time helped us in our endeavour. Also some of the processes had not been included in the BES line balancing data and inclusion of these processes also boosted the MOP. Do It First Time Right (DIFTR) Inspection, which included post and pre inspection processes had not been considered and its inclusion increased the work content of such fitment processes having a direct impact on the utilization percentage and the MOP of each area. This project gave us insights into developing a few non-engineering skills such as mainly negotiation, which are highly demanded in a manufacturing work position. Although we had some stalemate like positions in the middle we used the correct moves and were able to deliver a considerable increase in the MOP from around 180 to 260. Although our Proposed Action Plans shall bear fruit in the imminent future we have nurtured a Framework wherein the Measure of Performance Metric is given commensurate attention to that of Achieving the Output, we anticipate that the Management will take it up on themselves to foster their efficient functioning and be frequently in touch with the Business Excellence Services and shed their animosity and doubts as both them are indeed working for a common cause that is to boost the Company™s LCV Footprint and undertake the most robust of Process Design and Techniques with quixotic efficiency.

Major Learning Outcomes: MOST Analysis, Negotiation skills, Assembly line working

Brief Description of working environment, expectations from the company: Tata Motors Limited (Founded in 1945) is an Indigenous Multinational Automotive Manufacturing Firm based in the Financial Capital of India, Mumbai and is a member of India™s most Influential brand the Larger TATA Conglomerate. A USD 42 Billion Organization, it is a leading global Automotive Manufacturer (17th Overall & 5th Largest in CV™s in the world) with a portfolio boasting of a plethora of range of Passenger Cars, Sports Vehicles, Commercial Buses and Trucks and State of the Art Defence Vehicles. It is the De-facto leader of the Indian Automotive Industry and is the 5th Largest when it comes to the Domestic Passenger Vehicles sales. It™s On and OffRoad Footprint encompasses as much as over 175 Countries across the Globe. Tata Motors Pimpri, Pune the flagship plant of TATA Motors is compartmentalized to allude to the production of Passenger (PVBU) and Commercial Vehicles (CVBU) separately. It espouses of all the facilities that TATA Motors could possibly muster up namely the Design, Manufacturing and the Research and Development Centres. All of which are carried out concurrently. With Over 60,000 strong Employee base the Organizations brags of having sold upwards of 9 Million Vehicles and is credited with having upto 6,600 Sales and Service Points. The Pune Unit is one amongst the 20 locations in the world and 6 locations in India the others namely being, Sanand, Lucknow, Pantnagar, Dharwad and

Jamshedpur which rolls out a plethora of different Vehicles at will. If we were to focus on the CVBU Unit which quintessentially deals with Commercial Vehicles, The Pune plant manufactures a range of LCV, M&HCV Trucks the prominent ones being ULTRA, Xenon Pickup, the vintage SFC™s and LPT Models. Meanwhile drifting our attention towards the PVBU Unit, a cornucopia of Hatchbacks, Sedans, Utility Vehicles and Stylebacks await us. Also, reportedly Tata™s principal subsidiaries the English Jaguar and Landrovers are also assembled from broken down stage. Hexa, Tigor, Zest and Tiago have now become household names in the Indian Market. The CVBU Unit has a Human Resource Division, a Central Office Building, Manufacturing Division, Various Part and Vehicle Assembly Shops, the ERC which takes care of the Design Aspect, Business Excellence Services, Quality Division and associated divisions. It definitely is one amongst the State of the Art Automotive Manufacturing Facilities which embraces the philosophies of Lean Manufacturing, Maynard Operations Sequence Techniques and of Sustainable Manufacturing that being inculcated from its parent company™s core philosophy. Pune™s Robustness, Devoted Work Ethic and an Innovative Visionary Approach have made it possible to be consistently among the Awards two of which being in the realm of LCA and Energy Efficiency respectively testament to it™s commitment to Sustainable Development.

Academic courses relevant to the project: Production Techniques -1 and 2

PS-II Station: Tata Motors Ltd., Sanand

Student

Name: PRAVEEN KUMAR SAHU (2014ABPS0392H)

Student Write-up

Short Summary of work done during PS-II: Establishing work productivity standards in indirect areas.

Tools used (Development tools - H/w, S/w): MOST, Excel, Word, and power point

Objectives of the project: To find out manpower of different areas in the production plant

Outcomes of the project: Reduction in manpower of several areas.

Major Learning Outcomes: Manpower assessment, Contract estimations.

Brief Description of working environment, expectations from the company: Employees are friendly and are always ready to help you with your project. The work schedule of the company is very hectic.

Academic courses relevant to the project: Operations management, engineering optimization

Name: VARUN PRASAD (2014A4PS0175G)

Student Write-up

Short Summary of work done during PS-II: Work was mostly in production line managing the production. Work was also done in manufacturing readiness of a new shop. Fair amount of MS excel work was involved

Tools used (Development tools - H/w, S/w): CNN machines were used

Objectives of the project: To launch a new engine (1.2L petrol Turbocharged engine) and EV (Electric Vehicle)

Outcomes of the project: The new engine (1.2L Petrol Turbocharged) and EV (Electric Vehicle) was launched successfully

Major Learning Outcomes: Production Management, Technical and Logistical Challenges involved in starting a new project, working of production lines and various production techniques

Brief Description of working environment, expectations from the company: The working environment was mostly shop floor and shop office. The people are generally friendly. The company expectations are manageable. The mentor will help whenever required. The technical knowledge required for work will be provided by the company.

Academic courses relevant to the project: IC engines, Automotive Vehicles, SCM, PPC, PT1, PT2

Name: PALASH GOEL (2014A4PS0386G)

Student Write-up

Short Summary of work done during PS-II: The work done involved designing the process flow for Tiago Limited Edition and correcting the problems and errors that arose in the production process

Tools used (Development tools - H/w, S/w): Excel word

Objectives of the project: To launch Tiago Limited Edition

Outcomes of the project: Launch complete for Tiago Limited Edition

Major Learning Outcomes: Learnt about Paint Shop Learnt about process design

Brief Description of working environment, expectations from the company: Relaxed work environment, Depends on manager, Long work hours and very few holidays, not much expectations

Academic courses relevant to the project: Little bit PPC, Automotive

Name: AAKRIT PATEL (2014A4PS0843H)

Student Write-up

Short Summary of work done during PS-II: Launch Management of 1.2L NGTC Engine

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Meeting production targets of 1.2L NGTC Engine

Outcomes of the project: Production targets were met and Tata Nexon was launched successfully on Sep 21

Major Learning Outcomes: Management Experience

Brief Description of working environment, expectations from the company: Working environment was supportive but also lethargic and overly bureaucratic. No technical knowledge was gained, only managerial experience

Academic courses relevant to the project: IC Engines, Supply Chain Management, Automotive Technologies

Name: YASH SINGHAL (2014A4PS0350G)

Student Write-up

Short Summary of work done during PS-II: The target is to minimize the manufacturing defects during production, reducing time and money losses and improving the product quality and customer satisfaction. The Approach involves analysis of the occurring defects, categorizing it (on the basis of agency, demerits, frequency, etc.), finding the root causes, implementing temporary and then permanent actions and preparing final reports with all formalities. The work also includes thinking of

new innovative and efficient ways of improving the production quality, manufacturing cost savings methods, manpower/ man-hour reductions, design modifications, etc.

Tools used (Development tools - H/w, S/w): Machining tools, Excel, basics design and analysis software

Objectives of the project: Increasing production by eliminating manufacturing defects hence improving efficiency

Outcomes of the project: Increased production, Improved Quality (Higher FSO/DRR), New quality check points implemented, New chart layout designed which were easier to compile, Improved shop quality standards.

Major Learning Outcomes: Learnt about various manufacturing process, techniques and machinery used in manufacturing industries. Learnt various problem solving approaches and ideas for efficient results. Worked with various departments and seniors Employees in problem assisting learning decision making, risk management and project supervision

Brief Description of working environment, expectations from the company: Considering the level at which the plant operates the work is very challenging. Even small delays and mistakes can have high impacts on production. Daily shift is of 8.5 hours excluding around 3 hours of daily bus traveling. Many times you can be called in the early shifts at 6:30 am or in the late shift till 11:30pm. Even the Sundays are working most of the time to meet the production demands. Interns are not given any leaves, they cut your salary for every holiday. There is poor management and communication between divisions. There is a lot you'll learn but don't have high expectations from the company.

Academic courses relevant to the project: Production planning and control, automotive vehicles

PS-II Station: Tecture Structures Pvt Ltd., Nagpur

Student

Name: SHREYANSH AGRAWAL (2014A2PS0324H)

Student Write-up

Short Summary of work done during PS-II: Mainly the projects focused on the modelling of Steel Structures, Framed Concrete structures along with Architectural modelling.

Tools used (Development tools - H/w, S/w): Autodesk Revit, Autodesk Navisworks, Autodesk AutoCAD, Lumion, Autodesk Advance Steel

Objectives of the project: Building Information Modelling, 4D Simulation, Rendering

Outcomes of the project: In depth knowledge regarding Building Information Modelling

Major Learning Outcomes: Construction Planning, Implementation of BIM in Real World.

Brief Description of working environment, expectations from the company: Good Working Environment

Academic courses relevant to the project: Construction Planning, Design of Concrete Structures, Design of Steel Structures.

PS-II Station: Thornton Tomasetti, Mumbai

Student

Name: Samradh Agarwal (2014A2PS0627P)

Student Write-up

Short Summary of work done during PS-II: Shop drawing review of contractor drawings to ensure conformity to TT standards.

Tools used (Development tools - H/w, S/w): Bluebeam, MS-Excel, ETABS, RAM concept, SAP2000

Objectives of the project: Shop drawing review and design of structural members

Outcomes of the project: completion of review stage of the project.

Major Learning Outcomes: Understanding various design processes, important parts of the design, and various design philosophies while reviewing the fabrication drawings.

Brief Description of working environment, expectations from the company: A corporate office like conditions with very advanced Computer Systems and licenses to major Structural Design Softwares. A CCD Coffee Machine and other hot beverages. The building itself has availability of different types of food choices. Train station directly accessible from the building makes it easy to travel. The work environment is calm mostly but at rare occasions becomes fast paced when deadlines are to be met. Design projects cannot be expected even in the duration of 6months, but only if luck strikes. Company

does undertake a lot of major projects that span across globe, hence an opportunity to work on international projects is there.

Academic courses relevant to the project: Design Of Steel Structures, Design Of Concrete Structures, Earthquake resistant design and construction, strength of materials.

*PS-II Station: VMS (Vakil Mehta Seth) Consultants Private Limited,
Mumbai*

Student

Name: Aman Bansal (2014A2PS0789P)

Student Write-up

Short Summary of work done during PS-II: Workdone in company was related to designing and analyzing structures. Basic knowledge for designing and analyzing were polished. Apart from theoretical knowledge, practical assumptions and working culture were tormented. Working with architects and senior engineer gave an insight of industry. Various aspects of designing and modeling were learnt. Starting a new project from root level gave us knowledge of basic requirement and full procedure which is to be followed for construction of a structure.

Tools used (Development tools - H/w, S/w): ETABS, STAAD.PRO, RCDC FE, SAFE & AUTOCAD

Objectives of the project: How to model, analyse and design tall RCC and composite structure using different softwares and stay within the constraints of IS codes.

Outcomes of the project: we gained the use of work culture and professional assumptions which are apart from theoretical knowledge.

Major Learning Outcomes: softwares at professional level and basic aspects for designing.

Brief Description of working environment, expectations from the company: working environment is good for marathi knowing people. company is not having proper hierarchy. work allocation is random and not constant. lack of proper orientation for company. stipend is bit low as compared amount of working hours. work is totally related to core civil designing. quality of work is really good. exposure one can get from this ps is worth having if interested in civil core job. that span across globe, hence an opportunity to work on international projects is there.

Academic courses relevant to the project: extremely relevant

Name: Rohan Singh (2014A2PS0605H)

Student Write-up

Short Summary of work done during PS-II: The work in Vms is broadly divided into two sections that are Drafting and Engineering. We were given the role of structural engineering interns. Our main job was to model, analyze and design structures according to the requirements and operating in the constraints of the IS Code. We used multiple softwares like ETABS, SAFE, RC DC, Staad.pro, Excel sheets to do the same. The structures we designed were in both RCC. And Steel and some were even composite. The structures were designed very carefully with all the design loads and load combinations applied appropriately and different material specifications defined and assigned properly. Then we get the results for appropriate section size, percentage of steel, reinforcement, material, etc. And multiple iterations are ran for the same till we get the optimum result and it goes through multiple levels of rigorous checking and then the good for construction (GFC) drawing is issued. These steps are the basis in handling a project and involves multiple changes and requests from the client side which we need to entertain. Each small building of a large project goes through these steps.

Tools used (Development tools - H/w, S/w): ETABS, SAFE, RC DC FE, SAP2000, Staad.Pro, Autocad, MS Excel

Objectives of the project: The objective was to optimally design high rise structures at a low cost and meeting all the design standards

Outcomes of the project: We can now easily design High Rise Structures with the help of softwares and IS Codes according to clients' requests.

Major Learning Outcomes: Fluent in ETABS, SAFE, STAAD.PRO and can design multiple types of structures with ease in RCC and Steel.

Brief Description of working environment, expectations from the company: The work environment was very good and professional. It was very difficult at first but the seniors were very helpful in teaching the basics of the work and softwares and helped us to get live projects. There were constant sessions held for every one to learn the advanced concepts in multiple fields involving civil engineering. Our expectation was to be able to design a complete constructable structure independently, which was more than fulfilled. The staff is very helpful and friendly and the company seniors are very considerate and accommodating. But after learning everything the work pressure is immense and it brings out your best and the joy of hitting the deadline is amazing. All things considered Vms was a very fruitful learning experience.

Academic courses relevant to the project: Structural Analysis, RCC and Steel Design, Structural Dynamics, Earthquake resistant Design, Wind Resistant Design

PS-II Station: Worley Parsons India, Mumbai

Student

Name: Rahul Mehta (2014A8PS0408G)

Student Write-up

Short Summary of work done during PS-II: Mobile Application Development and UI/UX Designing

Tools used (Development tools - H/w, S/w): Android Studio, Inkscape, UXPin

Objectives of the project: 1.) To make an employee rating application for the company. 2.) To design a website (for the team I worked with).

Outcomes of the project: 1.) Android Application 2.) Website prototype

Major Learning Outcomes: Gained knowledge about UI/UX Designing, Android Development with XML and JAVA.

Brief Description of working environment, expectations from the company: Wide variety of work (software only) is available if one is working with the New Technologies team. The mentors are very helping. I got exposure in a lot of fields such as Web Designing, Android Development, Text Analysis and Optical Character Recognition.

Name: Vedant Bajoria (2014A8PS0521G)

Student Write-up

Short Summary of work done during PS-II: Project Planning, Project Management, Data Migration, Consuming web services using C#/.NET

Tools used (Development tools - H/w, S/w): Primavera P6, Visual Studio, Oracle BI

Objectives of the project: Consolidation of Data

Outcomes of the project: Data consolidated across all the databases

Major Learning Outcomes: Project Management, Project Planning, C#/.NET, XML

Brief Description of working environment, expectations from the company: Helpful environment, they value your inputs and involve you in decision making. In addition to that, you get to opt for the team you want to work with..

Academic courses relevant to the project: POM, Computer Programming

Domain: Eco & Finance & Management

PS-II Station: AlphaMD, Mumbai

Student

Name: Nina Jain (2014A5PS0124P)

Student Write-up

Short Summary of work done during PS-II: In the domain of Analytics, Market Research, Post product launch assessment, KOL mapping and interview related to pharmaceutical companies. Corporate social responsibility work including data entry, calling work, creating databases. Making presentations.

Tools used (Development tools - H/w, S/w): Excel, PowerPoint

Objectives of the project: Making a patent calendar and using drug patent data to predict future trends

Outcomes of the project: Created a patent calendar which is a type of drug approval tracker. Carried out predictive modeling of pharmaceutical patents to predict future trends.

Major Learning Outcomes: Learnt using Visual Basic for Application and predictive modeling, general knowledge of patents.

Details of papers/patents: Collected patent related data for the years 2011 to 2017 using USFDA and Orange book, using VBA made a patent calendar. Using tableau, data visualization software created

graphs important for analysis and using R programming and predictive modeling predicted data for the next 7 years and displayed the results with the help of line graphs.

Brief Description of working environment, expectations from the company: Decent working environment. Three divisions in the company-analytics, life sciences and heed (CSR). Will be helpful and relatable to students who have completed PMQC and Pharmacoeconomics.

Academic courses relevant to the project: Pharmaceutical management and quality control, Pharmacoeconomics

Name: Pranav Prakash (2014A5PS0429P)

Student Write-up

Short Summary of work done during PS-II: My entire PS II work was basically divided into the two different vertical of the company i.e. AlphaMD HEED (Health, Education, Environment & Development): a dedicated social sector vertical of Alpha MD and AlphaMD Analytics. Need assessment study for ICICI Foundation was done along with various Social sustainability projects. A study was done regarding CSR which included studying term CSR in greater depth, understanding the implementation process of CSR and the importance and ways of Communicating CSR. The later part of the PS included understanding the evolution, features and need of Big Data with aim to configure the application of big data in healthcare in greater details followed by detail analysis of a case study and analysis of mental health illness in a firm.

Tools used (Development tools - H/w, S/w): MS Excel, MS Word, and any designing tool (Canva)

Objectives of the project: The Objective of this project is to learn and understand the current scenario of the non-government organizations, along with the understanding of the entire implementation process of CSR Concept, as in the execution process. The various key steps and success factors for a CSR strategy to be highly impactful. The need and the ways to communicate CSR work to the stakeholders so that the stakeholder gets the answers they are looking for. To study the various healthcare application like predictive modeling, computational Phenotype, and patient similarity. To study the case studies of the application of Big Data in Healthcare.

Outcomes of the project: Understanding the current scenario of the non-government organizations and reaching out to them for implementing projects focused on health and helping them in setting up delivery model for programs. Along with understanding the entire implementation process of CSR Concept, as in the execution process. The various key steps and success factors for a CSR strategy to be highly impact. Detail study of the present Healthcare system, the cost to quality trade-off with the intention of finding solution that can be provided by Big data system i.e. some of the application of Big data like predictive modeling, computational phenotype, and patient similarity(as in understanding these processes and application). Along with the understanding of Predictive modeling in greater detail i.e. the entire modeling pipeline from defining Prediction target to the Model evaluation Studying term CSR in greater depth with the understanding of the implementation process of CSR accompanied by the study of importance and ways of Communicating CSR

Major Learning Outcomes: 1.Study of the present Healthcare system, the cost to quality trade-off. 2. Solution that can be provided by Big data system i.e. some of the application of Big data like predictive modeling, computational phenotype, and patient similarity (as in understanding these processes and application) 3. Predictive modeling in greater detail i.e. the entire modeling pipeline from defining Prediction target to the Model evaluation 4.Understanding the working and implementation process of the corporate social responsibility term. 5. Learning about the importance and ways of Communicating CSR

Brief Description of working environment, expectations from the company: Working Environment of the company is good, one can find people from varied field with great profile and experience which expose a great learning scope.

PS-II Station: American Express India, Bangalore

Student

Name: Bharath T (2014A7PS0033G)

Student Write-up

Short Summary of work done during PS-II: As the world is becoming more and more digital, Big Data is becoming subsequently more prevalent. So, American Express utilizes its 'closed loop' data to correctly predict the defaulting probability to reduce credit loss. Currently the entire process executes on SAS (Statistical Analysis System) utilizing Teradata which are not distributed architectures. AmEx uses Hadoop File System (HDFS) to store such a large amount of data. SAS is unable to utilize this. For its working, the data has to be exported and converted into Relational Database. To reduce this overhead, our team is trying to leverage other big data processing options available in market such as Apache Spark. Our work, under the supervision of Mr. Bharat Reddy, was to first validate the data across existing database and the new indigenous cornerstone database and then migrate existing process from SAS into Big Data environment and then compare the performance of the two processes.

Tools used (Development tools - H/w, S/w): Pyspark, Hive, SAS, Excel, indigenous tools like: - mlplat

Objectives of the project: Conversion of the existing sas processes to big-data environment, Building an automated model refresh Framework

Outcomes of the project: Completed both the projects successfully

Major Learning Outcomes: Exposure to big data platform and the credit cards business, and how we determine the risk related to payback of every transaction.

Brief Description of working environment, expectations from the company: The overall work culture is pleasant. The team-mates are very helpful. The timings are flexible.

Academic courses relevant to the project: No relevant course

Name: Nikhil Virmani (2014A7PS0035G)

Student Write-up

Short Summary of work done during PS-II: I learnt about the python packages such as nltk, pandasql and also learnt about edit distance algorithms in python using panda's data frame. Also helped in the boosting algorithms like gbdt, xgboost which helps the firm. Currently, all the card transactions and the offers available on Credit cards are given widely. It depends on users™ usage in the past and many other variables and factors. To predict whether to give offer and promotions we here at AmEx use machine learning altos to use data and test on new data and make accurate predictions on the data

Tools used (Development tools - H/w, S/w): Softwares like Pyspark framework, Hive terminal, I python notebook

Objectives of the project: Tool developed was aimed for the easy and swift transition from old database ecosystem to the new ecosystem. Other tools and also were deployed in the system and the validation and tasking part was also done

Outcomes of the project: Tool for variable mapping helped the users for matching old variable with the new ones. New ML boosting altos like XGBoost were also delivered which reduced time for implementation by 3 times.

Major Learning Outcomes: I learned about Pyspark framework, hive language and hive sql queries and also python open source libraries

Brief Description of working environment, expectations from the company: The work culture is pretty good. People are pretty helpful and the work is pretty interesting. Office timings are flexible and its pretty helpful, environment is good

Academic courses relevant to the project: Machine Learning, Database system, Information retrieval

Name: Sai Varun Kolluru (2014A7PS0169H)

Student Write-up

Short Summary of work done during PS-II: As the world is becoming more and more digital, Big Data is becoming subsequently more prevalent. So, American Express utilizes its oclosed loop data to correctly predict the defaulting probability to reduce credit loss. Currently the entire process executes on SAS (Statistical Analysis System) utilizing Teradata which are not distributed architectures. AmEx uses Hadoop File System (HDFS) to store such a large amount of data. SAS is unable to utilize this. For its working, the data has to be exported and converted into Relational Database. To reduce this overhead, our team is trying to leverage other big data processing options available in market such as Apache Spark .Our work, under the supervision of Mr. Bharat Reddy, was to first validate the data across existing database and the new indigenous cornerstone database and then migrate existing process from SAS into Big Data environment and then compare the performance of the two processes.

Tools used (Development tools - H/w, S/w): Pyspark, Hive, SAS, Excel, indigenous tools like: - mlplat, detach

Objectives of the project: Conversion of the existing sas codes to big-data environment, Building an automated model refresh Framework

Outcomes of the project: Completed both the projects successfully

Major Learning Outcomes: Exposure to big data platform and the credit cards business, and how we determine the risk related to payback of every transaction.

Brief Description of working environment, expectations from the company: The overall work culture is pleasant. The team-mates are very helpful. The timings are flexible.

Academic courses relevant to the project: No Relevant courses

PS-II Station: American Express India, Gurgaon

Mentor

Name: Mr. Shariq Shazad Khan

Designation: Manager, Risk and Capabilities

Student has successfully developed a tool iBOT which automates repetitive and periodic work in Business Analysis. Interns has strong programming background, analytical skills and have also shown accountability to their work. We prefer interns who can come with novel ideas to solve challenging business problems.

Faculty

Name: Ashish Narang

Comments: Expectations from industry: American Express also known as Amex is an American multinational financial services corporation headquartered in New York. The organization is best known for its credit card, charge card, and traveller's cheque businesses. Interns are expected to work on technologies like R, SAS, Python, Java, Angular JS and Node JS etc. Organizations prefer students who have done courses like Artificial Intelligence, Machine Learning and have good hands on experience on python. In addition to it, they prefer interns to can take ownership of the task assigned, show eagerness to learn new stuff, open to work on different technologies and have excellent communication skills.

Student

Name: Rishabh Jain (2014A7PS0069G)

Student Write-up

Short Summary of work done during PS-II: Created an interactive business insight one click tool which allows the user to run their scripts with the functionality of scheduling the jobs and real time data presentation.

Tools used (Development tools - H/w, S/w): Node, Pyspark, hive, html, css, js, sas

Objectives of the project: Modify the existing tool with web based functionality

Outcomes of the project: A production level tool which is going to be used by a team of 104.

Major Learning Outcomes: Learned Node js, SAS, VBA and Pyspark. Got a great idea about the functioning of corporate world.

Brief Description of working environment, expectations from the company: Working environment in Amex is 9.5/10. They treat you like an employ. Great people with huge experience are available around

you. The office are is open, no cubicles. Amex itself holds a great respect in NCR. Good company to work in.

Name: Shubham Keserwani (2014A7PS0773G)

Student Write-up

Short Summary of work done during PS-II: With the evolution of Big Data, American Express is also into migrating their all existing processes to Big Data environment as SAS they are currently using won't be suitable when working on Big Data. So the project work was to migrate existing SAS process to PySpark and Hive and automating these processes.

Tools used (Development tools - H/w, S/w): Python, PySpark, Hive, SAS

Objectives of the project: Migration of existing SAS processes to Big Data environment.

Outcomes of the project: Automated processes in PySpark were created.

Major Learning Outcomes: Learnt PySpark and Hive/SQL got brushed up.

Brief Description of working environment, expectations from the company: Working environment is pretty good. All team members are helpful and supportive at all times. Interns here are treated as regular employees but working hours is quite odd.

Academic courses relevant to the project: Databases, Operating Systems, C Programming

PS-II Station: Aranca, Bangalore

Student

Name: Prakhar Gupta (2013B1A80860G)

Student Write-up

Short Summary of work done during PS-II: The Work was mainly focused on Web Development and Developing other excel tools using VBA

Tools used (Development tools - H/w, S/w): PHP, MySQL, JavaScript, Excel, HTML

Objectives of the project: To Build a Website which is able to create Fund factsheets

Outcomes of the project: Successfully able to implement the website

Major Learning Outcomes: Excel, VBA, HTML, MySQL, PHP

Brief Description of working environment, expectations from the company: Since it's a startup kind off, hence not much to expect in the form of Working Environment



PS-II Station: Credit Suisse - Credit Analytics, Mumbai

Student

Name: Aakash Goyal (2014A2PS0561P)

Student Write-up

Short Summary of work done during PS-II: Worked on calculating credit risk exposure for different trade types

Tools used (Development tools - H/w, S/w): VBA Excel, SQL, Internal Softwares

Objectives of the project: To understand methodology of Standardized Approach of calculating credit risk

Outcomes of the project: Helped in validation of the internal tool developed by IT team to calculate exposures using SACCR methodology

Major Learning Outcomes: Got familiar with various trade types and their exposures

Brief Description of working environment, expectations from the company: All the teammates are ready to help. The best part is you'll not be treated as intern. Everyone is very friendly and if you want to learn, it's the best opportunity to explore.

Academic courses relevant to the project: Derivatives & Risk Management

Name: Jathin Katikala (2014A4PS0273H)

Student Write-up

Short Summary of work done during PS-II: Automated of Bond Haircut and worked on model validation using various Stastical methods.

Tools used (Development tools - H/w, S/w): VBA, SQL, R

Objectives of the project: To make prototype of bond haircut using VBA in excel and model validation of existing models in R.

Outcomes of the project: Made an excel based tool to automate bond haircut and also automated all the model validation tests in R.

Major Learning Outcomes: VBA, SQL, R programming.

Brief Description of working environment, expectations from the company: Working environment is good. Lot of resources to explore. The company wants us to have a minimum knowledge in finance field.

Academic courses relevant to the project: Derivatives of risk management, Financial Management, Security Analysis of Portfolio Management.

Name: Mintoo Rai (2014A4PS0207P)

Student Write-up

Short Summary of work done during PS-II: As part of the Governance and Reporting team, I was responsible for keeping a check over the implementation of Control Framework in the different Business

Lines of the Global Markets Division and preparation of reports covering Internal Operational Risk Incidents. Furthermore, Realizing the scope of automation, I took upon the project of automating the data refinement process using Visual Basic for Applications.

Tools used (Development tools - H/w, S/w): Visual Basics for Applications, Microsoft Excel

Objectives of the project: To Increase the efficiency of the Reporting Process using Visual Basics for Applications.

Outcomes of the project: The automation project helped streamline the processes by not only saving time in the report generation but also by decreasing the scope of manual errors.

Major Learning Outcomes: I developed a better understanding of the Financial Services Industry and the growth opportunities that the industry has to offer.

Brief Description of working environment, expectations from the company: According to me, the key attributes that the company expects from us would entail professionalism, taking initiatives, being resourceful and to focus on cooperation with fellow employees. Academic courses relevant to the project: Financial Management, Financial Engineering, Fundamentals of Finance and Accounting, Security Analysis and Portfolio Management and Derivatives & Risk Management.

PS-II Station: Credit Suisse - Global Markets Controls COO, Mumbai

Student

Name: Kavish Bathija (2014A8PS0449P)

Student Write-up

Short Summary of work done during PS-II: Worked on testing of internal controls of credit Suisse business that fall under the purview of Global Markets. Testing both business specific and common controls as a part of yearly RCSA process. RCSA is risk control self assessment which is performed every year as a check on the firms operational risk

Tools used (Development tools - H/w, S/w): MS EXCEL

Objectives of the project: Control Testing

Outcomes of the project: operational risk mitigation

Major Learning Outcomes: Regulatory guidelines, operational risks and risk reporting and quality assurance

Brief Description of working environment, expectations from the company: Major focus of this report revolves around Controls attestation; more specifically in Global Markets and how important testing is in banks. Credit Suisse, as a boutique Investment Bank, operates in a wide variety of segments for its clients, as well as for itself (proprietary). It helps banks realize the amount of capital that should be allocated as a cushion in case; these risks could not be mitigated.

Academic courses relevant to the project: SAPM, DRM, FRAM, FINMAN

PS-II Station: Credit Suisse - Market Risk Quant, Mumbai

Student

Name: Pratyush Sharan (2013B3A10666H)

Student Write-up

Short Summary of work done during PS-II: Worked on SR 11-7 testing for Risk Arbitrage Risk type, which involves back testing, stress back testing, PnL Explain testing, and Assumption testing and model documentation. Also worked on creation of a back testing tool in python for Non-Linear risk types

Tools used (Development tools - H/w, S/w): Python, Excel, and VBA

Objectives of the project: SR 11-7 Documentation for Risk Arbitrage, Python Backtesting Tool

Outcomes of the project: Risk Arbitrage Backtesting, SR 11-7 documentation, Non Linear Backtesting Tool

Major Learning Outcomes: Risk Methodologies, Python, SR 11-7 Compliance

Brief Description of working environment, expectations from the company: Working environment was very professional. Team was very helpful to me whenever I got stuck and otherwise also.

Academic courses relevant to the project: FRAM

PS-II Station: Credit Suisse - MLR Non-quant, Mumbai

Student

Name: Manas Luthra (2014A1PS0575P)

Student Write-up

Short Summary of work done during PS-II: Most of the work was related to the automation of existing excel reports using VBA Excel and SQL queries. Apart from this there were some daily risk reports to be sent to the business side.

Tools used (Development tools - H/w, S/w): VBA Excel, SQL

Objectives of the project: To understand about the various derivative products and automate the existing reports thus reducing man hours.

Outcomes of the project: Developed knowledge of various derivative products along with knowledge related to automation of excel reports using VBA Excel and SQL.

Major Learning Outcomes: Developed knowledge of various derivative products along with knowledge related to automation of excel reports using VBA Excel and SQL.

Brief Description of working environment, expectations from the company: Working environment is very good. Timings are flexible. Colleagues are understanding and helpful. Many Bitsians are working in the company so it makes the transition easier.

Academic courses relevant to the project: Derivatives and Risk Management, Financial Engineering

Name: Shobhan Panda (2014A4PS0391P)

Student Write-up

Short Summary of work done during PS-II: To control the operational risk of a bank, there are controls in place. The work of my team was to test the those controls.

Tools used (Development tools - H/w, S/w): VBA

Objectives of the project: To understand the operational risk of a bank and ways to mitigate it.

Outcomes of the project: I learnt about the operational risk. Also I learnt VBA in process as to automate some of the routine reports.

Major Learning Outcomes: The operational risk part of a bank is not taught in the college. So learning the importance of it was major lesson for me.

Brief Description of working environment, expectations from the company: The culture of Credit Suisse is very relaxed as compared to other investment bank. The seniors are quite approachable. The colleagues are very friendly.

Academic courses relevant to the project: SAPM, Financial Engineering.

PS-II Station: Credit Suisse - Model Risk Management, Mumbai

Student

Name: Siddharth (2013B3A10666H)

Student Write-up

Short Summary of work done during PS-II: I learnt key aspects of risks existing in various investments, the importance of keeping a check on those risks and the entire infrastructure that is involved in this elaborate process. Credit Suisse as part of its risk management deals with majorly three types of risks- Market Risk, Credit Risk and Operational Risk. As part of Scenario Design team, I got to learn about various factors that decide the its / losses made in the portfolios example the movements in Interest rates, Forex and Commodities. An important feature of keeping a cap on these risks is to be able to foresee the major market moves which necessitate generation of Scenarios on our portfolios. In this analysis, the idea is to bump various parameters like the Spot price, the Volatility or the Correlation and then see the impact of these bumps on our portfolio. Finally the drivers of our losses are figured out and according to the risk limits that we allot, information is conveyed to the traders. The significance of risk management has risen following various financial crisis events involving collapse of major financial entities and hence being a part of a team like this helped me develop an understanding of the crucial processes that are driving the trades being placed in the front office.

Tools used (Development tools - H/w, S/w): Regression Analysis.

Objectives of the project: Deliver Stress Testing Scenarios

Outcomes of the project: Helped the team in delivering the stress testing scenarios for Regulatory and Internal Purposes.

Major Learning Outcomes: Learnt how to project the macroeconomic and market data for various regulatory and internal scenarios

Brief Description of working environment, expectations from the company: Credit Suisse has provided an excellent platform for learning in the form of various Study modules, guest lecture sessions and also weekly meetings to discuss concepts within teams. In the initial months, many of the modules that were rolled out to us were mandatory. Apart from that, whatever free time was available between day to day work could be utilized for going through many more of these modules. They cover a huge scope of topics from basics of financial markets to studying Exotic options and complex Option strategies. I have learnt a lot of concepts through these packages not just pertaining to our team but across the entire industry. The guest lecture series was also an enlightening experience with people holding years of experience giving their valuable time in guiding the interns.

Academic courses relevant to the project: Financial Management, SAPM, DRM

PS-II Station: Credit Suisse - Prime Services, Mumbai

Student

Name: Ankit Gupta (2013B3A30715H)

Student Write-up

Short Summary of work done during PS-II: Work involved mainly making daily timely reports and understanding them.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Took one project on regional allocation of balance sheet

Outcomes of the project: Completed the regional allocation based on a methodology for PB business on TReg and Portfolio Margin platforms.

Major Learning Outcomes: Working of securities lending and swaps business

Brief Description of working environment, expectations from the company: Working environment is informal. Expectations are to work with various teams on different projects and reach the office on time preferably before other employees in your team.

Academic courses relevant to the project: DRM

Name: G. S. S. Srujana (2013B3AA0663H)

Student Write-up

Short Summary of work done during PS-II: I worked in the risk management team of Prime Services, mainly worked on the Business As Usual and daily reporting. It was a great opportunity for me as I got to know how the team works and how the department functions. I got to learn how to margin a portfolio, worked on stress testing and controls. In the process, I got to work with much experienced people and worked on different softwares.

Tools used (Development tools - H/w, S/w): Excel, MS Access, and Tableau are used regularly.

Objectives of the project: To learn how to margin a portfolio, stress testing and Controls.

Outcomes of the project: Daily Process of Stress testing, controls and worked Ad Hoc on Portfolio margining

Major Learning Outcomes: Got to learn the working of Prime Services from Risk Management Perspective

Brief Description of working environment, expectations from the company: It was a great working environment where I had the chance to interact with the manager on a regular basis. Got sufficient guidance for my work. The working environment is quite friendly yet challenging. There is a lot of scope to explore and learn as much as one wants to. PS overall is a great opportunity to understand the corporate world and interact with much experienced people.

Academic courses relevant to the project: Derivatives and Risk Management.

Name: Muskan Agrawal (2014A2PS0540H)

Student Write-up

Short Summary of work done during PS-II: I was working with the delta one team there, they provide synthetic exposure to global/country Indices to its prime clients. I worked on Index methodology of construction and rebalance, hence developed a sound model to forecast Index Periodic Rebalances as well as to suggest strategic positions to make some PnL.

Tools used (Development tools - H/w, S/w): VBA

Objectives of the project: To systemize index rebalancing process for delta one.

Outcomes of the project: I successfully developed the model and forecasted for two quarters.

Major Learning Outcomes: Understanding Index treatment to corporate actions and rebalancing.

Brief Description of working environment, expectations from the company: The work environment is very apt to learn and share. People are very open to the interns also to share new ideas.

Academic courses relevant to the project: Derivatives and risk management

*PS-II Station: Credit Suisse - Risk & Finance Data Analytics, Reporting,
Pune*

Student

Name: Satyanarayan Patel (2014A5PS0068P)

Student Write-up

Short Summary of work done during PS-II: Scenarios Exposure analysis

Tools used (Development tools - H/w, S/w): Excel, sql

Objectives of the project: I am in the Scenario Exposure Analysis team of Risk and Finance Data Analytics and Reporting department of Credit Suisse. The objective of scenario exposure analysis is to provide an easily understood and intuitive approach to risk management and complement the data from tools and techniques like VaR. The data from scenario exposure analysis can be used in any situation the company may face in the near future. This scenario analysis framework helps the senior management in identifying the risks and take the required actions to protect the earnings and capital of the bank from undesired impacts. My area of work lies in the analysis and reporting of the scenario impact.

Outcomes of the project: learned scenario analysis and reporting to PRA

Major Learning Outcomes: Scenario analysis

Brief Description of working environment, expectations from the company: If you want to work in finance sector, this could be learning for you if you are not from economics background. Work life balance is good. But, if want to do good work and don't want to specifically make a career in finance then don't choose this place.

Academic courses relevant to the project: 1) DRM 2) FRAM

Name: Tushar Gupta (2014A1PS0559P)

Student Write-up

Short Summary of work done during PS-II: As an intern under RFDAR (Risk and Financial Data Analytics and Reporting) Data Sourcing Division, I majorly worked on the 17.4 quarterly releases for the changes under The Basel Committee on Banking Supervision (BCBS) and International Organization of Securities Commissions (IOSCO) for the Credit Risk side. Apart from this, I was involved with MDR (Master Data Record)-an internal project for the firm to merge the Credit Risk and Market Risk side at a product level, which the firm has been trying to implement for a pretty long time.

Tools used (Development tools - H/w, S/w): SQLDBx, UNIX, MS-EXCEL 2010, and NOTEPAD++

Objectives of the project: 1. BCBS IOSCO - To process the regulatory changes at the Back office level and study its impact on exposure numbers as the change goes live in the production. 2. MDR - Club the Credit Risk and Market Risk attributes to form a unique mapping from the Front office to the Database at the product level.

Outcomes of the project: Extensive learning about a Project Life cycle and the Co's adopted methodology to process the same. Learnt soft ware's for business application more extensively like MS-EXCEL 2010, SQLDBx, and UNIX (for testing purposes).

Major Learning Outcomes: 1. Learnt about the information flow for the Co and what tools and soft ware's are used for data extraction and processing. 2. How the FOBO (Front Office and Back Office) Reconciliation is taken care of and being a part of Data Sourcing division, how the changes are dealt with at the Back/Middle End offices which are then used for by the Front Offices.

Brief Description of working environment, expectations from the company: As a first corporate experience, the Co has a lot to offer to learn and showcase one's skills. But that majorly depends upon one's will to learn and contribute to the firm within the short span and also the kind of project and team that you get to work along. The working environment seems pretty healthy, though corporate politics and other factors do come into play somewhere down the line in every firm.

Academic courses relevant to the project: SAPM (Security Analysis and Portfolio Management), DRM (Derivatives and Risk Management), FINEE (Financial Engineering)

PS-II Station: DBOI (Deutsche Bank) - Operations, Mumbai

Student

Name: ADITYA TORANE (2014A3PS0269P)

Student Write-up

Short Summary of work done during PS-II: I had worked at the CIB Centre of Deutsche Bank. We served as middle office support to the Fixed Income Products traders of Deutsche Bank. Work involved daily analysis and reporting of the Risk and Profit Loss incurred by these traders.

Tools used (Development tools - H/w, S/w): MS Office, Deutsche Bank Internal Softwares

Objectives of the project: Daily Risk and Profit Loss analysis and reconciliation

Outcomes of the project: Over the course of these 6 months, we worked upon various trade books involving different types of fixed income products.

Major Learning Outcomes: We got to learn in detail about the pricing and valuation of Interest Rates based products. While doing the analysis of these trades, we also got to learn their trading strategies.

Brief Description of working environment, expectations from the company: The work culture is good. Office timings are a bit stringent and company must be a bit prompt in offering pre-placement jobs to students as there is a lot of uncertainty regarding this.

Academic courses relevant to the project: Derivatives and Risk Management, Financial Engineering

Name: DEVANK SRIRAM (2013A4PS0382P)

Student Write-up

Short Summary of work done during PS-II: Providing risk and profit and loss numbers to the front office trading desk. Analysing product related issues such as trade booking and market data (i.e, curves and bond prices missing)

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Risk and PnL for traders

Outcomes of the project: Understanding risk attributions of financial products

Major Learning Outcomes: Understanding of valuations of financial instruments

Brief Description of working environment, expectations from the company: Very professional working environment. You will have to take the initiative, otherwise just stand back and watch 6 months go by in front of you. You should be ready to network with people and get work done.

Academic courses relevant to the project: Derivatives and Risk Management

Name: HARSH (2014A2PS776P)

Student Write-up

Short Summary of work done during PS-II: Credit analysis & regular portfolio monitoring for various counterparties to which DB has exposure

Tools used (Development tools - H/w, S/w): DB's internal software & hardware system, Microsoft Excel

Objectives of the project: To prepare the credit rating reports

Outcomes of the project: Learned about financial analysis of companies, world economy & financial markets

Major Learning Outcomes: Learned about financial analysis of companies, world economy & financial markets

Brief Description of working environment, expectations from the company: Being a global bank DBOI works in coordination with its US and German counterparts, Reports are sent to DB credit officers worldwide

Academic courses relevant to the project: Financial management, SAPM

Name: JANESH SINGLA (2013B3AB0754P)

Student Write-up

Short Summary of work done during PS-II: Risk validation and Analysis of the portfolio.

Tools used (Development tools - H/w, S/w): SAS, MS Excel, Python

Major Learning Outcomes: Tools learning, Understanding of risk

Brief Description of working environment, expectations from the company: Working environment is okay. But there is not much of learning.

Academic courses relevant to the project: Derivatives and Risk Management, Financial Engineering, Security Analysis and Portfolio Management

Name: Kriti Saxena (2014ABPS0384H)

Student Write-up

Short Summary of work done during PS-II: The work was mainly oriented towards avoiding breaches in risk exposure in portfolios and keeping a control check on the daily trades.

Tools used (Development tools - H/w, S/w): Excel vba

Objectives of the project: Daily BAU

Outcomes of the project: Efficiently managed tasks

Major Learning Outcomes: Learning about various credit derivative products

Brief Description of working environment, expectations from the company: Friendly atmosphere and helping people

Academic courses relevant to the project: DRM BAV

Name: NITESH KUMAR JAKHAR (2013B3AB0578P)

Student Write-up

Short Summary of work done during PS-II: Mainly involved in writing counterparty credit rating reports. This was done through balance sheet analysis, income statement analysis, peer analysis & financial spreading.

Tools used (Development tools - H/w, S/w): Company specific systems.

Objectives of the project: To give credit rating to various counterparties.

Outcomes of the project: Assigned credit rating to various counterparties.

Major Learning Outcomes: How to analyze balance sheet, income statement, cash flow and what all factors determine the credit rating of a company.

Brief Description of working environment, expectations from the company: Working environment was okay. You can contact almost any person for help if you need one. But didn't find many people who were motivated to work.

Academic courses relevant to the project: Fundamentals of finance and accounting, security analysis and portfolio management, derivative and risk management.

Name: Pragati Gupta (2014A1PS0609H)

Student Write-up

Short Summary of work done during PS-II: I was in the credit rating department where I was assigned the responsibility of rating several companies and assisting analysts in preparing rating reports. If you're looking for a stress-free good Finance PS, I'd suggest you should put this as your first preference. I believe I have learned a lot from my experience here.

Tools used (Development tools - H/w, S/w): DB patented software (Confidential)

Objectives of the project: Credit rating

Outcomes of the project: Credit rating

Major Learning Outcomes: Sound financial knowledge

Brief Description of working environment, expectations from the company: Stress free, good environment, good colleagues

Academic courses relevant to the project: FOFA, FM majorly. Other Finance courses would also help

Name: Rohit Choudhary (2014A1PS0543P)

Student Write-up

Short Summary of work done during PS-II: Credit Rating and daily tracking of counterparties

Objectives of the project: Done daily business work

Outcomes of the project: Done daily business work

Major Learning Outcomes: Rating analysis

Brief Description of working environment, expectations from the company: Working environment is quite good.

Academic courses relevant to the project: Fund fin

Name: Sudhanshu Kansal (2013B3A10648H)

Student Write-up

Short Summary of work done during PS-II: Risk Analysis, Stale Reporting

Tools used (Development tools - H/w, S/w): Excel, SPS, and GPC.

Objectives of the project: BAU

Outcomes of the project: Better know how of Financial markets and risk management

Major Learning Outcomes: Excel

Brief Description of working environment, expectations from the company: Working environment is good. No expectation

Academic courses relevant to the project: DRM, SAPM.

Name: Sunny Paruthi (2013B3A20758P)

Student Write-up

Short Summary of work done during PS-II: Credit rating analysis for counterparties in developed markets. Spreading of financials is done once we receive the annual and interim financial statements.

For both public and private counterparties. Analysis of subsidiaries is done based on their relevance, limits assigned to them and based on their regulatory authorities. Team also looks at any rating events such as mergers and acquisitions, share price movement, management change etc.

Tools used (Development tools - H/w, S/w): BARS, excel, internal softwares

Objectives of the project: Financial assessment of counterparties

Outcomes of the project: Credit rating

Major Learning Outcomes: Financial analysis, industry analysis

Brief Description of working environment, expectations from the company: Being a global bank, Deutsche has separate divisions for different aspects of banking. Gcrt is an open floor that works in coordination with offices in USA, Germany, Singapore, Tokyo etc. The ratings are done in Mumbai and the reports are sent to business side for further analysis and plan of action. Bank is moving towards automating a lot of their work, removing inefficiencies and including more analytical part

Academic courses relevant to the project: SAPM, financial management

Name: SUVRASOUMYA MOHANTY (2014A1PS0544P)

Student Write-up

Short Summary of work done during PS-II: The experience at the PS station was positive. Working time was for 9 hours. It was a great learning experience in finance and corporate culture.

Tools used (Development tools - H/w, S/w): Maximum softwares were DB classified softwares. Also used Excel and Outlook extensively.

Objectives of the project: Migration of Book running activities of America's core rates to Mumbai.

Outcomes of the project: Successful migration of various tasks. Automation of various daily activities to increase efficiencies.

Major Learning Outcomes: VBA coding, financial products, risk and PNL of banks, bank's financial infrastructure

Brief Description of working environment, expectations from the company: Working environment was good. People were extremely nice and helpful. No major expectations from company.

Academic courses relevant to the project: Derivatives and risk management

PS-II Station: Ecom Express Pvt. Ltd., New Delhi

Student

Name: Anshul Goel (2014A4PS0388P)

Student Write-up

Short Summary of work done during PS-II: Categorization of items using ML algorithms. Data compilation and representation using Python, R, Excel, SQL. Hub Time analysis using Tableau and SQL.

Tools used (Development tools - H/w, S/w): Python, R, SQL, Tableau, and Excel

Objectives of the project: To categorize all the items shipped by Ecom express.

Outcomes of the project: Successfully made an ML algorithm that can categorize all the products with an accuracy of 90%

Major Learning Outcomes: Learnt Data manipulation software's like R, python, SQL and representation of the database using Tableau and Excel.

Details of papers/patents: A white paper is going to be published based on the data that is collected and manipulated throughout the project.

Brief Description of working environment, expectations from the company: The working environment is fairly good. Mentors are able and supportive. Stipend is also good.

Academic courses relevant to the project: Computer programming

Name: Pranav Bhatt (2014A4PSO390P)

Student Write-up

Short Summary of work done during PS-II: Classification of various addresses into localities and sub localities. Geo coding of various pin codes

Tools used (Development tools - H/w, S/w): R, Python, and ML

Objectives of the project: To develop a new classification that optimizes last mile delivery routes

Outcomes of the project: Developed a classification that optimizes last mile delivery

Major Learning Outcomes: Python, ML,R, advanced MS excel

Brief Description of working environment, expectations from the company: Helpful mentors, good teammates, good stipend

PS-II Station: Edelweiss Financial Services, Mumbai

Student

Name: Krishna Chaitanya B (2013B4A40731H)

Student Write-up

Short Summary of work done during PS-II: Developed scorecard models for STHL and STLAP which is a decision making scorecard to decide if a loan is to be approved or rejected based on the details extracted from the applicant and co-applicant details. Build a scorecard model for FCU (Fraud Control Unit) to reduce the number of applications sent for sampling and hence reducing the cost incurred by

the organization. Implemented a recurrent neural network model to predict the WPI. Built an anomaly detection model to identify the outliers among a large number of insurance policies.

Tools used (Development tools - H/w, S/w): Excel, R Studio

Objectives of the project: The main objective of the project was to build scorecard models for different products such as small ticket home loans (STHL) and small-ticket loans against a property (STLAP) to prevent issuing loans to bad customers.

Outcomes of the project: STHL model has been deployed live as of 1st Dec and STLAP, FCU models have been approved.

Major Learning Outcomes: Learnt about different machine learning algorithms like RNN, Random forests etc.

Brief Description of working environment, expectations from the company: The work environment is great. They encourage your interests and try to assign the work accordingly.

Academic courses relevant to the project: Probability and Statistics and Machine Learning.

Name: Nandish Soni (2013B4A30845H)

Student Write-up

Short Summary of work done during PS-II: Analytics. Data Science Risk Management.

Tools used (Development tools - H/w, S/w): Tableau, R, and Python.

Objectives of the project: To prepare business quality model for the company, and models on other queries

Outcomes of the project: Successful completion

Major Learning Outcomes: Tableau, insights into Insurance business

Brief Description of working environment, expectations from the company: Good working environment, excellent learning experience

Name: Vinee Y (2013B4AA0544H)

Student Write-up

Short Summary of work done during PS-II: I was a part of the Systematic Trading, Global Markets Division as a Quant Researcher. My first few days involved learning and executing simple programs on time-series data in R and Excel. I did various research projects on trading strategies on fundamental and technical data. I also back-tested the strategies using R and tried to improve the performance of those strategies. I also did a research project on securities and opportunities available in Chinese Stock Market towards the end of the internship there.

Tools used (Development tools - H/w, S/w): R and Excel.

Objectives of the project: To find a profitable Trading Strategy

Outcomes of the project: Multiple Strategies with good Sharpe and Return profile.

Major Learning Outcomes: Thorough understanding of proprietary trading and building strategies from the ground level.

Details of papers/patents: Not to be disclosed.

Brief Description of working environment, expectations from the company: People in edelweiss, no matter which team you are in, are warm and approachable. They make sure you are well accustomed to the team and the work you do and are always willing to help. The food pricing is decent (not cheap) and the work station isn't cramped up. The kind of work changes drastically based on the department you are in.

Academic courses relevant to the project: SAPM. Probability and Statistics.

PS-II Station: Ernst & Young Pvt Ltd., Gurgaon

Student

Name: Ojaswi Panwar (2014A1PS0638P)

Student Write-up

Short Summary of work done during PS-II: I joined Ernst & Young LLP in the capacity of project trainee at the Power and Utilities Team under PI, BAS (Performance Improvement, Business Advisory services). My service line was Advisory and the sub-service line was Government advisory. The Practice school program was a major transition from theoretical based knowledge to a real world scenario, it helped me to get a different perspective overall. Myself being from a Chemical engineering background with no prior business acumen actually found it much interesting to get through this consulting phase. During this brief stint at the EY, i got the opportunities to involve myself in different activities ranging from client meetings, conferences, team meets, routine discussions and seminars. Most of the team

members were experienced and subject matter experts in their domain. One of the best things i like was the EY's internal webinars and knowledge factory portal which provided a comprehensive list and tools for all the career path domains along with the previous engagements proposals. It really helped to get acquainted with functioning of whole management and other domains too. My first project started with the Business Model Development for a private client. And this was the first time when i actually realized the true potential of MS-Excel(Power Pivot).Then the following few weeks, I spent my time learning MS-office applications (Excel, Word and PowerPoint, VBA) and continued to hone these skills further down the line. Then, i was assigned the task of conducting workshops on "Demand Side Management and Energy Efficiency" for circle level officials of DISCOMs (Distribution Companies) for a client, as a part of the project .It included logistics management, project management, budgeting, co-ordination with the government officials. Finally, it concluded with the report submission to the client encompassing all the briefings of the workshop and a case study on the Power scenario for that particular state. I would like to extend my thanks to the team for their constant support and help throughout the tenure. It was a wonderful experience working with the EY.

Objectives of the project: To conduct capacity building workshops on "Demand Side Management and Energy Efficiency" for the circle level officials of DISCOMs, Report submission to client based on the workshops

Outcomes of the project: Successfully Conduction of workshops,Report prepared for client based on the analysis done from workshops inputs, Developed a case study for Power Scenario in State(Confidential)

Major Learning Outcomes: Project Management, Logistics Management, Business writing and communication skills, budgeting

Brief Description of working environment, expectations from the company: The first two days at EY were bit embarrassing, as this much is the time it took us to realize that #Professionalism is not what we think of. So, the first day there we were, dressed up in formals, entered the mess and wow! so many eyes glued to us, felt good!! Then came the second day, entered, same attire, but this time too- much wow! But wait, we figured it out this time. So, the reason for us being in limelight for 2 days was none other than our Tie! Actually, we were the only ones dressed up in perfect formals while the others were in their business casuals. Cut to the chase now. Working at EY was a phenomenal opportunity for me. There you will get to meet up a lot of people from the different sectors including Social, Power, IT, Audit, Transaction etc from novice to the expert experience level of candidates. You go and talk them out for

any help. You will be amazed to know how much willing they are to help you. And the best part is that you get to learn a lot from the experiences and wisdom of ages garnered by those people over time. Most of the members of my team were subject matter experts in their respective domains which helped me a lot as they were easily approachable for any guidance throughout. I would like to extend my thanks to the team for their constant support and help throughout the tenure. Working with the team in this learning environment has really boosted my skill sets and made this PS2 a wonderful experience.

Academic courses relevant to the project: No relevant course done by me

Name: Shombit Dhar (2014A4PS0323P)

Student Write-up

Short Summary of work done during PS-II: I got an opportunity to work with Ernst & Young LLP as a trainee in the Advisory sector under the PS-2 programme. I worked in Business Advisory in the Government Sector in the Power and Utilities domain. The team I worked with is actively engaged with both government and private clients in the renewable energy sector. My projects dealt with two broad topics: Distributed Energy Resources and Grid Connected Rooftop Solar Photovoltaic (GRSPV). I worked on one knowledge paper, one business proposal and multiple presentations during my tenure at EY. The projects dealt with global DER markets and business model development for GRSPV penetration in India. I, under the guidance of senior consultants, was delegated the duty of analysing global DER market landscapes, identifying market signals for increased uptake of renewable and consulting stakeholders in order to understand the challenges faced by GRSPV for penetrating the Indian market. Apart from working on reports and presentations, I was also exposed to multiple client interactions. While working on another project, I was given the responsibility of coordinating capacity building workshops for State Electricity Distribution Companies in Bihar and Odisha. I was also given the opportunity to attend various conferences and summits related to the Renewable and Electric Vehicle space. Working at EY provided me with great exposure to the consulting sector and provided me with immense knowledge of the intricacies of the Indian power market. I would like to thank the PS Division and EY India profusely for this opportunity.

Tools used (Development tools - H/w, S/w): Microsoft PowerPoint, Pro-Ex (proprietary EY software)

Objectives of the project: To create a knowledge report that analyses the global Distributed Energy Resources (DER) Market, the benefits of DER adoption for India and the challenges faced in increasing the penetration of Rooftop Solar in India.

Outcomes of the project: The roadmap for increased DER adoption was understood and Rooftop Solar was identified as a key sector for India with regards to increasing DER adoption. The challenges faced in rooftop solar penetration were understood and various business models were analysed and their applicability were suggested.

Major Learning Outcomes: Sector knowledge of the business aspects of the Indian Electricity market was gained. Business models for rooftop solar were understood in detail. Various soft skills such as presentation skills, client interaction etiquettes, business writing styles etc. were learnt.

Brief Description of working environment, expectations from the company: I had a chance to complete my PS-2 at Ernst & Young LLP's office at Golf View Tower, Gurugram which houses EY professionals working in different service lines such as Advisory, Transactions, Tax and Assurance. The working environment at EY is highly professional. All the colleagues I had a chance to work with were very ambitious and extremely efficient. Professionals at EY work under strict deadlines and work hours may often be long. Employees are expected to maintain a professional demeanour at all points of time. In this regard there are various trainings and workshops held at regular intervals which provide employees a chance to hone soft skills such as business etiquette, writing styles, presentation abilities etc. The culture at EY stems from ~asking better questions to build a better working world. Questioning the status quo and the reasoning behind every decision is encouraged at all levels in the organisation. EY™s core values: ~Integrity™, ~Respect™, ~Teaming™, ~Courage to Lead™ and ~Building Relationships™ are adhered to by all in the organisation. I expected the organisation to provide me with a platform to engage in difficult business problems and to understand first-hand how such problems are solved. This was an experience which was granted to during my tenure in the organisation. EY is a great place to gain corporate exposure and my time spent at the organisation has helped me gain a lot in terms of my overall development and I thank the PS Division and EY India for this opportunity.

Academic courses relevant to the project: Principles of Management, Energy Economics and Policy, Financial Management, Technical Report Writing

PS-II Station: Futures First Info Services Pvt Ltd, Gurgaon

Student

Name: Harsh Vardhan Singh (2014A3PS0211G)

Student Write-up

Short Summary of work done during PS-II: Trading

Tools used (Development tools - H/w, S/w): Stellar, Trading Technologies

Objectives of the project: To understand Candlestick Patterns

Outcomes of the project: Became proficient in using charting techniques

Major Learning Outcomes: Charting techniques, price patterns, technical analysis

Brief Description of working environment, expectations from the company: Nice Company, stressful job

Academic courses relevant to the project: SAPM

Name: Pragya Sharma (2014A5PS0499P)

Student Write-up

Short Summary of work done during PS-II: Proprietary futures trading of commodity on Trading Technologies and Stellar platform

Tools used (Development tools - H/w, S/w): Platform - Stellar, Trading Technologies

Objectives of the project: To learn strategies to maximize profitable days of trading Brent Crude Market

Outcomes of the project: Learnt strategies like 6 month and 1 month fly, their difference and spreads to trade profitably when futures market is range trading or do directional trades as per analyses of the market

Major Learning Outcomes: Learnt how to trade futures market during high volatility and learnt how to analyze market sentiments.

Details of papers/patents: Candlestick patterns and technical indicators.

Brief Description of working environment, expectations from the company: Trading floor where disciplined traders analyze their respective markets and ensure they keep track of each detail that goes in their market. The company demands sincerity and dedication. Focus towards net profit is important.

Academic courses relevant to the project: Security Analysis and Portfolio Management, Derivatives Risk Management.

Name: Pranshu Gupta (2014A1PS0752G)

Student Write-up

Short Summary of work done during PS-II: To study the effectiveness of technical or mathematical indicators in combination with Candlestick charting technique which is a special method of visualizing the behavior of asset prices. The purpose of this work is to lay the basis for future investigations of bullish and bearish markets and then develop a systematic approach by which the combination can be used to deal in live markets. The strategies explained in this report are tested on outright of ICE Brent crude oil Future markets.

Tools used (Development tools - H/w, S/w): Trading Program, ADL developing program

Objectives of the project: Observe and Understand chart patterns, price patterns and technical indicators

Outcomes of the project: Observed and Implemented various candlestick patterns and Technical Indicators

Major Learning Outcomes: Trading, Analyzing Risk Reward ratio, Developing Strategies.

Brief Description of working environment, expectations from the company: Great Working environment, Good Risk Taking, Excellent Mental Maths and Mental Ability

Academic courses relevant to the project: Security Analysis and Portfolio Management, Derivatives Risk Management

Name: PRIYANSHI BATRA (2014A5PS0316P)

Student Write-up

Short Summary of work done during PS-II: Trading Brent crude oil futures on SIMULATOR.

Tools used (Development tools - H/w, S/w): Trading platform- stellar and trading technologies

Objectives of the project: Financial market analysis

Outcomes of the project: Understanding of technicals required for intraday trading

Major Learning Outcomes: Technicals of intraday trading

Brief Description of working environment, expectations from the company: Working environment is good. It is a 12hr job so becomes hectic. Also they don't prefer girls due to timing issue.

Academic courses relevant to the project: Security Analysis and portfolio management, Derivatives and Risk Management

Name: Rashi Pansari (2014A5PS0712P)

Student Write-up

Short Summary of work done during PS-II: Financial market analysis (Analysed Live markets of Crude oil Brent futures and traded them using Virtual money based on technical analysis) Studied oil markets and the factors which affect its price in the spot market.

Tools used (Development tools - H/w, S/w): Software (Trading technologies)

Objectives of the project: Come up with strategies to hedge and manage monetary risk reward balance

Outcomes of the project: Traded with virtual money to earn profit, performance was evaluated solely on the basis of Profit/ Loss .

Major Learning Outcomes: Risk reward balance in finance, Monetary management in portfolio, Global oil markets, Technical indicators used in intra day trading.

Details of papers/patents: Japanese Candlesticks patterns were studied and applied

Brief Description of working environment, expectations from the company: The company treated interns as regular employees and hence the work environment was stressful (12 hours per day). The performance is judged on the basis of Profit Loss you make.

Academic courses relevant to the project: Security analysis and portfolio management, DRM

Name: Samarth Jain (2014A1PS0596G)

Student Write-up

Short Summary of work done during PS-II: The report highlights the effectiveness of technical or mathematical indicators in combination with Candlestick charting technique which is a special method of visualizing the behavior of asset prices. The purpose of this work is to lay the basis for future investigations of bullish and bearish markets and then develop a systematic approach by which the combination can be used to deal in live markets. The strategies explained in this report are tested on outright of ICE Brent crude oil Future markets.

Tools used (Development tools - H/w, S/w): Worked on trading platform like stellar and TT(trading technology)

Major Learning Outcomes: You can develop set of skills which are required to become a good trader

Brief Description of working environment, expectations from the company: The report highlights the effectiveness of technical or mathematical indicators in combination with Candlestick charting technique which is a special method of visualizing the behavior of asset prices. The purpose of this work is to lay the basis for future investigations of bullish and bearish markets and then develop a systematic approach by which the combination can be used to deal in live markets. The strategies explained in this report are tested on outright of ICE Brent crude oil Future markets.

Academic courses relevant to the project: SAPM and DRM

Name: Tavneet Singh (2014A2PS0601P)

Student Write-up

Short Summary of work done during PS-II: Analyzing market using various tools and take positions according to take long or short positions in the market to generate profits in the market.

Tools used (Development tools - H/w, S/w): Stellar and Trading technologies software for generating the live market prices

Objectives of the project: Interpretation of the market behavior using various tools

Outcomes of the project: None, as trading is done on a simulated environment.

Major Learning Outcomes: Better understanding of the various derivatives especially Futures and its significance in the physical market.

Brief Description of working environment, expectations from the company: The environment of the company overall is friendly but the job profile requires pressure handling and a lot of patience. The company requires that the people analyse the market behaviour and come out with your own trading strategies.

Academic courses relevant to the project: DRM, SAPM

PS-II Station: Futures First Info Services Pvt. Ltd., Jaipur

Student

Name: Abhinav Rawat (2014A3PS0006P)

Student Write-up

Short Summary of work done during PS-II: Worked on two projects, 1. Development of automated Data visualization processing tools on Excel-VBA, 2. Processing and Analysis of Market Data in R

Tools used (Development tools - H/w, S/w): R, MS Excel, Thomsons Reutets, Trading Technologies and Bloomberg

Objectives of the project: Development of automated Data visualization processing tools on Excel-VBA, & Processing and Analysis of Market Data in R

Outcomes of the project: Made 2 major automated Excel sheets(and several others) which is being used by the traders on daily basis, processed data on R to back test trading algorithms and wrote R scripts plot market Data with technical indicators.

Major Learning Outcomes: R, MS-Excel, Excel VBA, programming skills, Big Data handling in R and professional conduct

Brief Description of working environment, expectations from the company: Working Environment is good and energetic.

Academic courses relevant to the project: OOP, probability and Statistics

Name: Chakshu Ahuja (2014A7PS0194H)

Student Write-up

Short Summary of work done during PS-II: Developed indicators and strategy based on Historical Data that work on live markets.

Tools used (Development tools - H/w, S/w): eSignal, stellar, Excel

Objectives of the project: Develop indicators and strategy based on Historical Data that work on live markets.

Outcomes of the project: Developed indicators and strategy based on Historical Data that work on live markets.

Major Learning Outcomes: Algorithm trading

Brief Description of working environment, expectations from the company: Very good working environment but work bit inclined towards analytics

PS-II Station: Genpact, Bangalore

Faculty

Name: Shekhar Rajagopalan

Comments: Expectations from industry: Basic Programming Skills, Excel Skills, Analytical Skills, Writing Skills, Corporate Etiquette, Statistics



Student

Name: Amandeep Singh (2014B4TS0948P)

Student Write-up

Short Summary of work done during PS-II: Built a data model to figure out cross-utilization opportunities between the teams for European region. Developed a code to for the automation of the process of Submission and Companion Quality check for European teams.

Tools used (Development tools - H/w, S/w): Automation Anywhere, Excel

Objectives of the project: Scope of cross-utilization opportunities between the European teams using Data Model. Automation of the tasks of Delivery Team

Outcomes of the project: The different teams that can be cross-utilized were identified and the process of submission and quality check were automated, reducing the dependency of manual intervention.

Major Learning Outcomes: How to develop code in Automation Anywhere, How to build a dynamic data model in excel, How to build an effective dashboard in excel, how to build a macro in excel.

Brief Description of working environment, expectations from the company: We were working in the IRI Department, responsible for delivering CPGR Analytics solutions to the respective clients.

Academic courses relevant to the project: Statistical Inference and Applications, Object Oriented Programming, C Programming, Optimization.

Name: Ankit Dube (2013B4A30503P)

Student Write-up

Short Summary of work done during PS-II: Project 1 Identify potentially fraudulent claims from UK health insurance claims data. To do this we obtained an understanding of the UK Healthcare industry. Based on this understanding, we framed hypotheses. If a claim was flagged by a hypothesis, it displayed highly suspicious behavior. The claims flagged by these hypotheses were identified as potentially fraudulent. Project 2 The development of an interactive workbench capable of identifying potentially fraudulent (flagged) claims and displaying the results in a visual manner. The hypotheses from the previous project were taken and standardized. In addition, statistical methods and machine learning were used to obtain patterns present in fraudulent health insurance claims. Based on these patterns, the workbench can then flag insurance claims that have a high probability to be fraudulent. It displays the potentially fraudulent claims and prioritizes the flagged claims based on the return on investment.

Tools used (Development tools - H/w, S/w): Softwares - R, RStudio, shiny

Objectives of the project: To create a workbench that can identify potential health insurance fraud.

Outcomes of the project: Workbench was successfully created

Major Learning Outcomes: Machine learning, data analytics, healthcare industry

Brief Description of working environment, expectations from the company: Genpact has provided me with an excellent environment to learn and develop my skills. I have been provided with an exceptional project and all the aid and support I need. However, the company took a large amount of time to assign me the project. Once the project was assigned, I was given weekly targets to achieve. A team of experts would advise me on weekly meetings and assign me tasks to accomplish by the next meeting. I was given free reign on how I accomplished the tasks. All the team members were available for advice as needed.

Academic courses relevant to the project: Statistical Inferences and Application, Object Oriented Programming

Name: Anupriya Beniwal (2014B4TS0974P)

Student Write-up

Short Summary of work done during PS-II: I was allotted Data Science team. I did work related to AI and Machine Learning.

Tools used (Development tools - H/w, S/w): Python Language

Objectives of the project: To build recommendation engines in order to enhance consumer experience.

Outcomes of the project: Increment in sales of products and services.

Major Learning Outcomes: Machine Learning

Details of papers/patents: Presented paper written on my project on "Fifth International Conference of Business Analytics and Intelligence" organised by IIM Bangalore.

Brief Description of working environment, expectations from the company: The company is pretty flexible with timings. The work was. Stipend was too less.

Academic courses relevant to the project: Probability and statistics, optimization and CP.

Name: Bhawini Agarwal (2014B3TS0954P)

Student Write-up

Short Summary of work done during PS-II: Worked with innovation team of genpact on market structure tool and created brand family repository for team also did exploratory analysis of data using SAS software

Tools used (Development tools - H/w, S/w): SAS

Objectives of the project: identifying widespread opportunities using market structure tool

Outcomes of the project: category segmentation and category heirarchy

Major Learning Outcomes: learnt sas and the tool og genpact and gain insights on US retail market

Brief Description of working environment, expectations from the company: Culture of organisation is awesome people are very cool and supportive and various events are organised in which we were invited as interns and it was really awesome along with working the environment is awesome for analytics and operation team

Academic courses relevant to the project: Marketing research and Econometric s and Mathematical and statistical methods.

Name: N V S S Koundinya (2013B4A40108P)

Student Write-up

Short Summary of work done during PS-II: The projects mainly deal with Deep learning approach for the Computer Vision problem. The objective of the projects undertaken is to develop models that give decent predictions on the data, predominantly in the form of images. This is achieved by machine and deep learning methods/techniques where in a model is trained on a major chunk of the data called training set and validating the model on remaining data called validation set. Thus trained model then is used for predictions. Input images used for training as well as validation can be of various sizes, shapes and types such as Black and White images, color images, satellite images etc. Further the problem can be a classification problem or the regression problem. To develop an understanding of the task at hand

and to meet the requirements of the project, the concepts of Deep learning such as Convolutional Neural Networks (CNNs) for classification problems, Region based CNNs (R-CNNs), Fast and Faster R-CNNs for regression problems have been studied. A few machine learning concepts such as model structure, optimization techniques like gradient descent, bias variance tradeoff have also been studied. To implement these theoretical concepts, Python language and APIs mainly TensorFlow, Keras are used. The following are the projects undertaken during the internship: The first project is a regression machine learning problem where in crop yields are to be predicted. The second project is on object detection. Apart from projects, the following tasks are also assigned: Sessions on machine and deep learning mainly Convolutional Neural Networks (CNNs) for the entire team. Sessions on TensorFlow API for the entire team. Readings on topics such as Online Offline Learning, Reinforcement Learning etc. and other minor tasks as instructed by the manager.

Tools used (Development tools - H/w, S/w): Python is used for writing the code. Open source distribution, Anaconda, is used for Python installation as well as Python interpreter. For developing the models™ architecture, APIs such as TensorFlow and Keras are used.

Objectives of the project: To develop deep learning models for computer vision problems

Outcomes of the project: Deep Learning models have been developed for the projects. The projects undertaken are a part of the newly launched initiative by Genpact called Genpact Cora which aims to bring in digital transformation using the AI based platform and thus to create an industry first-AI for the real world.

Major Learning Outcomes: Student has learnt the following new concepts. Basic concepts of Machine Learning. Idea and functioning of Convolutional Neural Networks (CNNs) of Deep learning. Idea and functioning of a few state of the art models in Object detection. Basic concepts of Reinforcement Learning.

Brief Description of working environment, expectations from the company: The working environment is a pleasant one. There is no pressure on us and we are given enough freedom to explore our ideas for the projects. Also sufficient time was given to learn new concepts which we hadn't studied previously on campus. The managers know the limitations of interns and thus have given us work accordingly providing enough space. As a result, I think that we have performed well and have been able to meet the expectations of the company.

Academic courses relevant to the project: C programming, Optimization, Machine Learning, Neural Networks.

Name: Srishti Khatri (2014A8PS0444P)

Student Write-up

Short Summary of work done during PS-II: Developed and customized a Chatbot in Python

Objectives of the project: To develop a chatbot for a given functionality

Outcomes of the project: Successfully developed and customized the chatbot for the given functionality

Major Learning Outcomes: Learning the industry applications of concepts of machine learning

Details of papers/patents: AI Based Conversational Entity for Product Recommendation; presented at ICBAI 2017 held at IIM-B

Brief Description of working environment, expectations from the company: Healthy learning environment, helpful seniors; stipend too low

Academic courses relevant to the project: Machine Learning

Name: TK Suryansh (2014A7PS0060G)

Student Write-up

Short Summary of work done during PS-II: Robotic Process Automation of European delivery team

Tools used (Development tools - H/w, S/w): Automation anywhere

Objectives of the project: In depth understanding of automation anywhere tool

Outcomes of the project: Complete automation of manual tasks in European delivery team.

Major Learning Outcomes: Automation anywhere software

Brief Description of working environment, expectations from the company: The working environment was pretty good and we got a overall exposure severally latest tools in the market such automation anywhere, SAS, sql etc.

Academic courses relevant to the project: Object oriented programming, data structures and algorithms

PS-II Station: Genpact, Noida

Student

Name: Suhas S (2013B3PS0634G)

Student Write-up

Short Summary of work done during PS-II: I was assigned Noida. There I worked on a collections and deductions model for a client. Access to the F&A data was denied. Since there were no other Analytics projects available, got shifted to Bangalore office, where I worked on pilot project on on boarding Delay and Quantification of the probable Leakage due to the same. Built a dashboard in R for the project. Last one month, I got trained on Media Lift. They compute the lift in sales brought in by an ad campaign. Had to work on Hive for data preparation for modelling, which will be done on Julia.

Tools used (Development tools - H/w, S/w): R Hive Excel Internal Tools

Objectives of the project: On boarding delay and Revenue Leakage: Quantify the Revenue Leakage and determine the major reasons for rejection.

Outcomes of the project: The project is yet to be pitched to the client

Major Learning Outcomes: Working of OTC cycle working of ad campaigns and computation of their performance

Brief Description of working environment, expectations from the company: Very good working environment, if you want to work. There is learning opportunity, but you need to ask them for the work. Everyone in the team I was part of were talented very cool.

Academic courses relevant to the project: Econometric Marketing Research

Name: Suhaib soni (2014A7PS0109G)

Student Write-up

Short Summary of work done during PS-II: Most of work i did in PS2 was related to natural language processing. I learnt many techniques in text mining such as sentiment analysis, topic modelling, bag of words model and clustering. I also learned how to work on a big analytics projects.

Tools used (Development tools - H/w, S/w): R studio

Objectives of the project: Analyzing data to get business insights

Outcomes of the project: Insights and recommendations from textual data

Major Learning Outcomes: Text mining

Brief Description of working environment, expectations from the company: Working environment is good in company. Timings are very flexible. Profile is related to analytics and you can expect to learn good analytic techniques used in market

Academic courses relevant to the project: Information retrieval, Data mining

PS-II Station: Goldman Sachs India Pvt. Ltd. - Operations, Bangalore

Faculty

Name: Shekhar Rajagopalan

Comments: Expectations from industry: Basic Programming Skills, Excel Skills, Analytical Skills, Writing Skills, Corporate Etiquette State Street & Goldman Sachs - Basic Finance courses

Student

Name: Akshat Mechu (2014B3TS0952P)

Student Write-up

Short Summary of work done during PS-II: My work was mainly around the risk analysis of the various public distribution products offered by Goldman Sachs.

Tools used (Development tools - H/w, S/w): Excel and in-house tools of GS

Objectives of the project: Increasing the efficiency and reducing risk of the entire risk analysis process.

Outcomes of the project: We were successful in reducing the risk of the process. It leads to a reduction of risk on loss to the firm.

Major Learning Outcomes: Gained a greater understanding of excel software. Improved communication skills.

Brief Description of working environment, expectations from the company: You can expect hectic working hours, 10-12 hours a day. Great learning opportunities, given real responsibilities.

Academic courses relevant to the project: Fundamentals of Finance and Fundamentals, SAPM, DRM, Financial Eng.

Name: Asavari Kulkarni (2013B2A30748G)

Student Write-up

Short Summary of work done during PS-II: a] Inter Systems Reconciliations (BAU) b] Root Cause Analysis c] Workflow Automation a] Reconciliation of position between different systems, for different businesses and regions, between the risk system and the books & ledgers b] Root cause analysis on the breaks that appear between different upstream and downstream systems. c] Enhancing efficiency and reducing noise in the current architecture used by the team for its reconciliation.

Tools used (Development tools - H/w, S/w): MS-Excel, Some company specific softwares

Objectives of the project: a] Reconciliation of position between different systems, for different businesses and regions, between the risk system and the books & ledgers b] Root cause analysis on the breaks that appear between different upstream and downstream systems. c] Enhancing efficiency and reducing noise in the current architecture used by the team for its reconciliation

Outcomes of the project: a] Helped the team meet its daily targets better and sooner b] The team, for the first time, exactly got an on paper analysis of the major root causes of the discrepancies they were resolving everyday c] The overall automation and enhancing of processes did save human effort and time paving way to members being able to focus on better projects and initiatives

Major Learning Outcomes: 1. Understanding tech architecture of a finance firm. 2. Understanding different financial products and trade flow processes

Brief Description of working environment, expectations from the company: 1. Extremely supporting and professional managers 2. Good work ethics of all employees 3. Healthy inter-team interaction 4. Helpful Mentors

Academic courses relevant to the project: Project very specific to the company, so N/A

Name: I Jayanth (2014A8PS0780G)

Student Write-up

Short Summary of work done during PS-II: Data Analytics and Automation

Objectives of the project: Analyze and monitor risk

Outcomes of the project: Risk monitoring without the need for manual touch

Major Learning Outcomes: Usage of data blending software

Brief Description of working environment, expectations from the company: Friendly work environment

Name: Nivya Sharma (2014A5PS0639P)

Student Write-up

Short Summary of work done during PS-II: I have worked closely with Exotic Trade Review (ETR) team where my job was to do the detailed analysis of different trades to manage operational risk. We used to

ensure the consistency of documents with the internal booking systems before they are handed over to Clients. I have also worked on a project of automating the standard high volume products to reduce review time.

Objectives of the project: To understand the criticality of the work done ETR team. Also, automating standard high volume products to reduce review time.

Outcomes of the project: I got an in depth knowledge of derivatives and Risk analysis, Different products/trades done in market by high worth Clients, Advanced MS-excel

Major Learning Outcomes: Ms-excel, time management, Derivatives, Trades and Risk analysis, Analysis of different flavour codes of products trending in market

Brief Description of working environment, expectations from the company: Work environment in goldman is very motivating. Colleagues are very helpful. Trainings given online and offline are an immense source of information and will help getting a good understanding of the business different teams in Goldman does. Managers keep a track of daily progress report and keep poking their team members for improvement.

Academic courses relevant to the project: Fundamental of Finance and Accounting, Derivatives and Risk Management and Financial Management

Name: Prabhav Bhardwaj (2013B3A30641G)

Student Write-up

Short Summary of work done during PS-II: BAU - Front to back position level reconciliation for internal accounts. Project - Workflow Automation

Tools used (Development tools - H/w, S/w): Internal Goldman Sachs systems, MS Excel

Objectives of the project: Workflow automation

Outcomes of the project: Achieved the desired level of data integrity to proceed with workflow automation

Major Learning Outcomes: Analytical skills

Brief Description of working environment, expectations from the company: Professional working environment. Around 10 hours of work per day. Knowledge of basic finance concepts is helpful but not essential. All of the required skills can be learnt on job.

Academic courses relevant to the project: Basic Econ/Finance courses

Name: Prakhar Agarwal (2014A1PS0505P)

Student Write-up

Short Summary of work done during PS-II: Maximize the rate of confirmation automation process

Tools used (Development tools - H/w, S/w): Goldman Sachs specific softwares, cannot be revealed

Objectives of the project: Maximize the rate of confirmation automation process

Outcomes of the project: Increased the rate of process generation of confirmations

Major Learning Outcomes: Languages like PERL, Javascript

Brief Description of working environment, expectations from the company: I think of working at Goldman Sachs as more than just a job “Goldman Sachs is a holistically rewarding experience that works to maximize your potential not only as a financial analyst, but as a leader and pioneer. Despite being from a civil background, I got a chance to lay my hands on something that had deeply interested me-Big Data Analytics. My learning curve started the moment I entered Goodman Sachs from working across time zones to building a network of my own. And the technical knowledge I received from the project was icing on the cake. I learnt about data warehousing and analytical reporting tools which majorly impacted functions across the division reducing their reporting time from monthly to daily basis and drastically reducing manual labour, hence increasing the efficiency, which I believe is a major achievement for the firm. The Goldman experience helped me understand how the corporate world looks and works like. It helped me apply my technical knowledge to practical scenarios, transitioning from learning in college to application in the firm. The most important thing that I take back from this whole experience is grooving yourself around people and deadlines. I learnt to chart out the agenda and deliverables and then plan the timelines accordingly. I would take this opportunity to bring into the

picture the vast amounts of technical knowledge I learnt in the form of tools that helped me expand my knowledge base in Big Data domain. This experience gave me a further boost in this space which will come handy for my future projects and greatly increasing my chances for career in analytics.

Name: Rishabh Gupta (2014A1PS0696P)

Student Write-up

Short Summary of work done during PS-II: Business Analytics solutions to improve the efficiency of the process of Regulatory Reporting, automate the process of checking whether a disclosure has triggered, remove all the data quality issues and decommissioning of the legacy systems. PS: Goldman doesn't allow us to disclose our specific engagements and projects to anyone outside the firm

Tools used (Development tools - H/w, S/w): Proprietary Softwares, Signavio, and Alteryx

Objectives of the project: Risk Mitigation, Automation, Remove Manual touch point

Outcomes of the project: Workflow driven process with a checklist mechanism for traceability, transparency and automation

Major Learning Outcomes: Learnt about the business, Gained experience on

Brief Description of working environment, expectations from the company: The working environment and the company culture is worth emulation, great opportunities provided by the managers, a lot to learn, great place to start a career and probably build one. You are given responsibility and you are accountable for it, how you do it is up to you, creativity is appreciative, inquisitive nature is appreciated.

Academic courses relevant to the project: Derivatives and Risk Management

Name: Suraj Rangineni (2014A2PS0497P)

Student Write-up

Short Summary of work done during PS-II: I was a part of the ETR (Exotic Trade Review) team which comes under Securities Division Operations. My work was to review equity linked OTC trades. This basically involved checking what the trade intention was and if it is correctly captured in Goldmans systems. Also find any discrepancies in the documents that are required for OTC trades.

Tools used (Development tools - H/w, S/w): Confidential

Objectives of the project: Review equity linked over-the-counter trades and ensure accurate trade representation

Outcomes of the project: Found discrepancies and got them corrected.

Major Learning Outcomes: Understanding complex trade structures Integrated technology to enhance risk management controls

Brief Description of working environment, expectations from the company: The work culture and the people at the firm are very good. Working hours are pretty long, around 10 hours. Everyone is very accessible, from Vice Presidents to Managing Directors. The high workload and competitive environment compels you to bring out your best.

Academic courses relevant to the project: Derivatives and Risk Management

Name: V.G. ATLEY (2014ABPS0886P)

Student Write-up

Short Summary of work done during PS-II: My work at GS was mostly related to process automation, data analytics and visualization. The kind of work one is allotted in Goldman depends a lot on the team one ends up in. Fortunately, my team was mostly involved in Ad Hoc work, where we use the data we have to develop dashboards and visualize it in appropriate graphs, in order to identify risk metrics for the various teams in my department(Confirmations). Since my team had access to all the major data of my department, we were also involved in various reporting processes.

Tools used (Development tools - H/w, S/w): Excel, Data visualization software

Objectives of the project: Risk analysis and Data Visualization

Outcomes of the project: Multiple dashboards created for identification of risk metrics and automation of manual reporting processes.

Major Learning Outcomes: Expertise in Excel, data visualization software, major insight into the financial industry and the various processes involved in settling a trade.

Brief Description of working environment, expectations from the company: GS has a very professional working environment which also encourages self-learning. Good communication skills are a huge plus. The work will greatly vary from team to team. Working hours too will mostly depend on your manager, but is very flexible in most teams. Overall, it's one of the best PS stations one can opt for, if his/her interest lies in the non-core sector.

Academic courses relevant to the project: DRM

PS-II Station: InMobi - Supply Chain, Bangalore

Student

Name: Aayush Gupta (2013B4A10795P)

Student Write-up

Short Summary of work done during PS-II: Did a Beeswax project

Tools used (Development tools - H/w, S/w): Excel, Tableau

Objectives of the project: Market Intel of the advertising industry

Outcomes of the project: Data analysis, Decision Making

Major Learning Outcomes: Excel

Brief Description of working environment, expectations from the company: You feel like your home, casuals, 24*7 Cafeteria, Free food, Gym, Sports Hall.

Academic courses relevant to the project: Supply Chain Management

Name: Archit Chaudhary (2013B3A80737P)

Student Write-up

Short Summary of work done during PS-II: Managed the supply and demand channel for the Wadogo

(Inmobi's third party affiliate channel.)

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Revenue and profit margins growth

Outcomes of the project: Have achieved the positive Outcomes for revenue

Major Learning Outcomes: Supply chain Management

Brief Description of working environment, expectations from the company: The work culture is great at InMobi, motivating work environment.

Name: Bolla Reshma (2014A8PS0321P)

Student Write-up

Short Summary of work done during PS-II: End to end management of campaigns.

Tools used (Development tools - H/w, S/w): Excel, Company owned Softwares

Objectives of the project: Launch & Monitor Campaigns of various clients.

Outcomes of the project: Generated revenue to the organization.

Major Learning Outcomes: Client Management

Brief Description of working environment, expectations from the company: The Company has got an employee friendly Culture.

Name: Kumar Nimitt (2013B5A10783P)

Student Write-up

Short Summary of work done during PS-II: My work in the company focuses on learning how the Performance Business operates in the Digital Marketing Space. I am a part of the advertiser sales team whose primary KRA is to sell to mobile advertisers promoting their apps. My area of work is based on business analysis for Performance Advertisers and Publishers. My work involves analyzing the demand side accounts in the United Kingdom, Russia, Germany, Italy and North American Markets. Apart from that, I also make use of Sales Intelligence tools to effectively provide support to the on-field sales team

Tools used (Development tools - H/w, S/w): Sales Force

Objectives of the project: Analyzing the Demand side for the company

Outcomes of the project: I can do business Analysis for Performance Advertisers.

Major Learning Outcomes: Learned how the Performance Business operates in the Digital marketing space.

Brief Description of working environment, expectations from the company: Woor Culture at InMobi is very good. Employees here are very chilled out. There is a lot of freedom to put ones ideas in front of Manager. Company is doing pretty well and simultaneously takes care of each and every employee.

Name: Kush Gupta (2014A5PS0816P)

Student Write-up

Short Summary of work done during PS-II: Supply Side Margin Reporting

Tools used (Development tools - H/w, S/w): Tableau

Objectives of the project: To construct P&L View of the company

Outcomes of the project: P&L Interactive Dashboard

Major Learning Outcomes: Excel Skills, Tableau Advanced Learning

Brief Description of working environment, expectations from the company: Good Work culture

Academic courses relevant to the project: Supply Chain Management

Name: Lakshya Sharma (2013B1A10408P)

Student Write-up

Short Summary of work done during PS-II: Data Analytics

Tools used (Development tools - H/w, S/w): Salesforce S/w

Objectives of the project: Understanding digital marketing

Outcomes of the project: More no. of advertisers joined INMOBI

Major Learning Outcomes: Excelled in MS Excel, Data Crunching etc.

Brief Description of working environment, expectations from the company: Best environment or culture, you could find in any company.

Name: Priyal Jain (2014A2PS0773P)

Student Write-up

Short Summary of work done during PS-II: Acted as Campaign Manager in the Remarketing team of the organization. Was involved in Campaign set ups of different types of merchants.

Objectives of the project: To Set up and Optimize remarketing campaigns

Outcomes of the project: Ensured smooth functioning of running campaigns

Major Learning Outcomes: Optimization using different methods

Brief Description of working environment, expectations from the company: Environment in the office is very good. Interns are well divided into different teams and are received in a friendly manner by their respective teams. Leniency in office timings and no dress code whatsoever are two major positives of the company. First day orientation was well organized. No different expectations as such other than basics.

Academic courses relevant to the project: Operation Research

Name: Rayaam Ghosh (2014A1PS0557P)

Student Write-up

Short Summary of work done during PS-II: Multiple projects to increase sales efficiency, flow efficiency and process coherence. The projects encompassed various aspects of the organization's functions and departments, providing an all round wholesome experience.

Tools used (Development tools - H/w, S/w): CRM tools like Salesforce, Hubspot Sales, Hubspot Marketing, Tableau, Engagio etc.

Objectives of the project: 1. To increase Salesforce adoption for sales teams, 2. To ease SF usage for sales teams by tweaking the process flow, 3. Processing raw inbound leads to create SQLs, 4. To streamline delivery channels for placements.

Outcomes of the project: 1. 100% adoption of new flow and near 100% adoption of tools, 2. Revamped flow implemented and live, 3. Pilot process closed, plan for hiring an SDR team initiated, 4. Channels aligned.

Major Learning Outcomes: Ease of working with various CRM tools, gained valuable experience in being the major (sometimes, the only) stakeholder in pivotal tasks. This gives priceless first hand experience of dealing with various revenue related problem scenarios.

Brief Description of working environment, expectations from the company: The working environment is very casual and informal, with flexible working hours and a culture that values smart work over brute hard work. The company values efficiency and output over simply putting hours in the office. If you can complete something sitting from home in 2 hours, managers will urge you to do that over spending 8 hours on redundant activities. The expectations can be challenging to meet up to sometimes, although this depends on your team. But along with the tag of being from BITS, comes the added trust and responsibility to execute these challenges to the best of your ability.

Academic courses relevant to the project: Supply Chain Management

Name: Samyak Tatia (2013B1A40789G)

Student Write-up

Short Summary of work done during PS-II: At InMobi, I was allotted the position of an intern in the Sales Team(Performance Business, SEA Markets) as well as assisted the APMEA Supply Pod and Senior Account Strategist for Korea, Japan and ANZ. My worked ranged from tracking revenues for the business team, automation of analyzing fraudulent installs and further prevention, data visualization, campaign setup, campaign diagnosis, scaling campaigns, inventory sizing, market intelligence and lead generation. During my internship, worked on several reporting tools and gained insights on how mobile marketing works. In the process, I also received The Rising Star award for exceptional performance as a newcomer for Q3.

Tools used (Development tools - H/w, S/w): Excel, Google Data Studio, Internal Reporting tools - HasOffers, Cosmos and Clarity, External Reporting tools - Appsflyer and Adjust.

Objectives of the project: Creating a dashboard indicating the overall health of the SEA Business, Analyzing and mitigating fraudulent installs, campaign setup, diagnosis and scaling, market intelligence and lead generation.

Outcomes of the project: Creation of a dashboard indicating the overall health of the SEA Performance Business on Google Data Studio, Conceptualized the creation and development of a web app to analyze fraudulent installs and creating action items for the Delivery Teams.

Major Learning Outcomes: Gained an overall understanding of the performance business in the SEA region in the mobile marketing space. Learned about the targeting capabilities of InMobi for performance campaigns and its limitations. Analyzed installs from fraudulent sources and how its critical to mitigate the same in order to reduce a significant amount of revenue hits for the company.

Brief Description of working environment, expectations from the company: InMobi features in the Top 50 Best Companies To Work and I believe it lives up to its reputation. There is a lot of focus on culture in the company. The company is free from formalities like carrying ID cards for entry and access, dress codes, minimum numbers of hours to be spent per day etc. It expects every employee to act responsibly, be punctual and work towards achieving organizational goals. The HR makes sure that the people always have fun things to do to break free from the daily moribund routines. I've already experience various events like treasure hunts, sports days, numerous office parties, and whatnot. The office itself one of the most funky and beautiful ones you'd come across.

Academic courses relevant to the project: Marketing Research, Advertising and Sales Promotion.

Name: Shubham Agarwal (2013B2A40831P)

Student Write-up

Short Summary of work done during PS-II: campaign management

Tools used (Development tools - H/w, S/w): Excel, inmobi tools- unified, cosmos, clarity etc

Objectives of the project: campaign management

Outcomes of the project: campaign management

Major Learning Outcomes: campaign management

Brief Description of working environment, expectations from the company: work depends on the team, environment is quite good, free food, great people

Name: Varun Kumar P (2013B1A40656H)

Student Write-up

Short Summary of work done during PS-II: Coordinate between global supply and demand teams, analyze revenue trends, optimization of TAC.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Global Supply Demand Coordination

Outcomes of the project: Helped in scaling of publisher accounts, helped the demand team in reaching their target budget spends.

Major Learning Outcomes: The functioning of an Ad Network.

Brief Description of working environment, expectations from the company: The people are very friendly, the company has a very lively and energetic environment.

Name: Vishesh Sharma (2013B4A80195P)

Student Write-up

Short Summary of work done during PS-II: Strategy and Operations; Business Development ; Campaign Management

Tools used (Development tools - H/w, S/w): Strong knowledge of Excel, Thinkcell, Powerpoint

Objectives of the project: Increase Margins ; Convert Business Partners

Outcomes of the project: Fulfilled Objectives

Brief Description of working environment, expectations from the company: Great Working culture

PS-II Station: J P Morgan Services - Quant, Mumbai

Student

Name: Aravind Bolisetty (2014A4PS0202G)

Student Write-up

Short Summary of work done during PS-II: My work at JPMorgan Quant team can be described more as a 'Business as Usual' work rather than a research oriented one. JP Morgan is a global leader in derivatives business and Stock Indices are a part of this business. A few teams at the firm convert a clients requirement into a structured product to cater to the client's needs. Once such a product, in this case a stock index, is made, the sponsor of the index is responsible in calculating and publishing its index level to the market. This is a repetitive task and any errors in this process could lead to a Profit and Loss

(PnL) in several thousands of dollars to millions. To avoid such errors and to avert repetitive human involvement, the indices are deployed on a proprietary platform that calculates an index level automatically and publishes it to the market every day. My job at JP Morgan was to deploy various indices on such platforms and resolve issues that arise in the process. Later, I worked on deployed the same indices on a different platform that estimates the Greeks of such products based on the characteristics of the product. This platform will be used by the Traders to manage the risks associated with the trades on these indices.

Tools used (Development tools - H/w, S/w): Python, Visual Studio for Python, Microsoft Excel

Objectives of the project: Migration of equity indices from one proprietary platform to a new proprietary platform

Outcomes of the project: Migrated all live indices and performed maintenance when required

Major Learning Outcomes: Object Oriented Programming in large-scale platforms, Introduction to Quantitative Finance

Brief Description of working environment, expectations from the company: Challenging and demanding workplace. Motivating environment. The company expects high enthusiasm from the interns not only at their job, but also to understand the work that goes on in the entire team. Work at the firm as a Quant needs very good programming skills and an understanding of financial products (especially derivatives) is an added bonus. One should try and learn more about Quantitative Finance.

Academic courses relevant to the project: Security Analysis Portfolio Management, Derivatives Risk Management.

Name: Gopichand Valluri (2013B3A70734H)

Student Write-up

Short Summary of work done during PS-II: J. P. Morgan and Co. is one of the world's leading financial services, offering solutions to clients in more than 100 countries with assets of over 2trillion US\$. ¢ Working as an analyst with the Quantitative Equity Research-Infra group, responsible for mathematical implementation and evaluation of Structured Equity Products which J.P Morgan directly trades with the clients. ¢ ICE -the code name of the project which I associated and contributed for more than 60 equity products which uses different risk and pricing methodology. J.P Morgan has more than 80% of indexes traded as swaps, giving the clients discretion depending on his/her expected return and risk which they are willing to take. ¢ Depending on the strategy of Index they are classified into family of classes which ranges from simple ones as Rolling Futures to Complex one as Efficient which uses Markowitz Efficient frontier theory. Further Indexes loaded in Qtrade to find the risk sensitivities as in delta, Gamma and

Vega. ¢ Also the project provides flexibilities for the trader to add or remove signal depending on his requirement “ Simply put “ An Independent and technology driven solution to the trader desks as well as the front-end offices worldwide.

Tools used (Development tools - H/w, S/w): Athena, Qtrade , PSPs

Objectives of the project: ICE migration, building of indices which are traded majorly as swaps in JPMorgan

Outcomes of the project: Understanding of the quant finance in depth

Major Learning Outcomes: For me made clear about where my interests lies in the banking field and will strive make advancements into those parts

Brief Description of working environment, expectations from the company: JP is one of the best in terms of learning ,however you need to stretch your both work life balances and knowledge ,but can say you will enjoy whole learning process

Academic courses relevant to the project: Mostly Coding C++(mainly), python and finance electives .

Name: Prashant Jain (2014A1PS0495P)

Student Write-up

Short Summary of work done during PS-II: The work revolved around creating models of ex ante and ex post attribution analysis and automated web testing.

Tools used (Development tools - H/w, S/w): Python, Excel VBA

Objectives of the project: Create models relating to VaR and other attributions. Automated web testing for web applications.

Outcomes of the project: Automated Custody report testing and developed model for portfolio performance

Major Learning Outcomes: Automated testing, python programming

Brief Description of working environment, expectations from the company: The work environment is excellent with constant learning opportunities

Academic courses relevant to the project: Security Analysis and Portfolio Management, Financial Engineering, Derivatives and Risk Management

Name: Shivam Kedia (2013A4PS0346P)

Student Write-up

Short Summary of work done during PS-II: Dealt with front office desk requests. Created new scripts and enhanced existing scripts used for creating templates to book OTC structured derivative products. Development of tools as per request by FO.

Tools used (Development tools - H/w, S/w): Python language, Company developed softwares

Objectives of the project: To support front office desk traders.

Outcomes of the project: New templates used by traders to book trades. New tools for daily business requirements.

Major Learning Outcomes: Different kinds of structured derivative products, increased aptitude for coding. Got an opportunity to attend QR training programme.

Brief Description of working environment, expectations from the company: The working environment is very encouraging with a lot of talented people from different backgrounds. The timings are flexible and in the end you get to learn a lot.

Academic courses relevant to the project: Derivatives Risk Management, Maths 2, Probability Statistics, Financial Engineering, and basic coding knowledge.

Name: Suneha Bagri (2014A1PS0528G)

Student Write-up

Short Summary of work done during PS-II: Under Model Risk Reporting, I worked on the following:

- ¢ Automation of status emails to be sent to the concerned teams.
- ¢ Daily exception handling in case of any discrepancies or errors.
- ¢ Located the hidden errors that occur in the model reporting process and working on reporting them
- ¢ Implemented the addition of holidays in the model reporting process.
- ¢ Implemented Model Usage Restrictions for Commodities and FX asset classes
- ¢ Worked on enhancements of a web based application, to add functionality into the same

Under the Analytics Library, I worked on the following:

- ¢ Transfer of any external directory into the main analytics library.
- ¢ Building and generating local libraries of the migrated directory.
- ¢ Writing makefiles for the efficient build of the binaries.
- ¢ Linking the binaries which are produced locally with the binaries of the main analytics library.

Tools used (Development tools - H/w, S/w): Python, C++, Javascript, HTML, JQuery

Objectives of the project: To provide support to the on-going model reporting flagship project of the team

Outcomes of the project: Successfully implemented the given tasks, project being used now

Major Learning Outcomes: Hands on programming experience and the knowledge of how financial products are used in the financial services industry with the help of mathematical and analytical tools

Brief Description of working environment, expectations from the company: Excellent people to work with and highly motivated environment. Like other Financial Institutions, long-work hours are common with deadlines. The kind of exposure, especially to meet and interact with people across the globe having diverse backgrounds is a very unique feature that the QR teams at J.P.Morgan offer.

Academic courses relevant to the project: Derivatives and Risk Management, Data Structures and Algorithms, Object oriented Programming.

*PS-II Station: J P Morgan Services -Centralized Research Group (CRG) ,
Mumbai*

Student

Name: Harshreddy (2014A4PS0854H)

Student Write-up

Short Summary of work done during PS-II: Making company profiles, evaluation of balance sheets and income statements, updating trading and transaction comparables, benchmarking companies

Tools used (Development tools - H/w, S/w): Microsoft Excel and Microsoft PowerPoint and pitch book pro

Objectives of the project: To research regarding a particular industry or sector

Outcomes of the project: Suggestion of M&A of two companies

Major Learning Outcomes: Good financial knowledge

Brief Description of working environment, expectations from the company: Very good and friendly but a bit hectic

Academic courses relevant to the project: Financial management, financial accounting and business analysis and valuation

Name: Nikhil Vijay (2013B3PS0606G)

Student Write-up

Short Summary of work done during PS-II: My work mostly involved pricing and structuring various debt instruments like bonds, notes and loans. Updating all the market updates was also a regular part of my job

Tools used (Development tools - H/w, S/w): Excel, bloomberg, factiva, capital iq Dealogic, dataquery.

Objectives of the project: To gauge various valuation techniques along see pitching perspective of various hybrid debt instruments

Outcomes of the project: Assesd various valuation techniques and found out the positive environment for hybrid issuance

Major Learning Outcomes: Financial knowledge about debt markets

Brief Description of working environment, expectations from the company: Working environment is dynamic but can be pretty challenging with long working hours

Academic courses relevant to the project: Financial management, fufa, Sapm

*PS-II Station: J P Morgan Services- Global Markets Group (GMG),
Mumbai*

Student

Name: Rujuta Kelkar (2014A3PS0303G)

Student Write-up

Short Summary of work done during PS-II: Structuring and sales for FX options and swaps

Tools used (Development tools - H/w, S/w): MS office, Internal proprietary software

Objectives of the project: Pricing of various structures created for hedging purposes

Outcomes of the project: Reduction in significant hours of manual work due to partial automation using VBA

Major Learning Outcomes: In depth understanding of the derivatives world and the practical need for various vanilla and exotic structured products

Brief Description of working environment, expectations from the company: Very good infrastructure and resources provided. At least 10 hours of work expected.

Academic courses relevant to the project: Derivatives and Risk Management, security analysis and portfolio management

*PS-II Station: J P Morgan services- Global research Centre (GRC),
Mumbai*

Student

Name: Angad Singh Dhamija (2013B3A40647P)

Student Write-up

Short Summary of work done during PS-II: Worked on 3 major projects along with small daily tasks. I was assigned to the EU oilfield services sector where my manager and I tracked the happenings of the

companies covered by him. The end objective of the entire GRC division is to analyse how the companies covered by the analysts are performing and then recommend whether investing in those companies is sensible or not. This is done through the reports that are generally sold out to the company's clients.

Tools used (Development tools - H/w, S/w): Microsoft excel and Bloomberg terminal

Objectives of the project: Improving the investing decisions of the company's clients

Outcomes of the project: Each report sold to the clients is handsomely paid for to the organisation.

Major Learning Outcomes: Learnt about the financial services sector in greater depth, especially the equity research division since that's the division that I was working in. The learning curve was quite steep and the entire journey was a great learning experience.

Brief Description of working environment, expectations from the company: The people on the floor are quite helpful and most of the people are in the age bracket of 25-35 with the most prevalent qualifications being that of an engineer or CA. There are as such no common expectations from the company but varies from team to team. Some teams need interns to out in long hours every day while some are quite relaxed.

Academic courses relevant to the project: Security analysis and portfolio management

Name: Bhanu Phani Krishna Koduru (2013B3A20475P)

Student Write-up

Short Summary of work done during PS-II: I worked with multiple teams during my PS-II tenure and work varied from team to team. My work majorly focused on updating financial models, presentations and a few data files, listening to earnings calls of companies, automating a few excel files and making a short summary of the key points, and also attending client requests. One of the teams I worked with had given me a chance to make the financial projections (earnings projections) of a few companies by going through the financial reports of the company and its competitors to find the fundamental price of a stock. I also got a chance analyse the impact of "MiFID II" on trading of various asset classes.

Tools used (Development tools - H/w, S/w): Microsoft Excel, PowerPoint, and VBA Programming

Objectives of the project: The objective of the project is to help the senior analyst in publishing various notes on companies under his/her coverage and the industry.

Outcomes of the project: Publishing notes on Morgan Markets (service provided by J.P. Morgan to its clients) and updating data files used in the analysis by covering analysts.

Major Learning Outcomes: Techniques used in valuation of companies, finding the growth drivers of companies in an industry, improved research writing skill and attention to detail.

Brief Description of working environment, expectations from the company: Each person in equity research role works for a different analyst (team) sitting abroad (U.S., London, Singapore, and Australia offices), so the working environment lacks a little bit of team culture. Almost all the members working on floor are from IITs or BITS, so all the members on floor are like minded peers and are always willing to help in case of any issues. Company expects the individuals to meet the demands of senior analyst one works for and work timings are team sensitive.

Academic courses relevant to the project: Fundamentals of Finance and Accounting, Security Analysis and Portfolio Management (SAPM), and Financial Management

Name: Devwrat Vegad (2013B3A70681P)

Student Write-up

Short Summary of work done during PS-II: The major chunk of our time was spent on the housekeeping tasks of the company models and the related files of the companies in the coverage universe of the teams that we were allotted. We updated the files as and when the company released the numbers, assembled data to cater to client requests as and when required. We assisted the team in writing notes by mainly helping them with the charts and tables and sometimes write short paragraphs. Apart from this, I also made 3 working financial models in excel of 3 new companies from scratch by compiling the different financial statements from filings into a linked and working excel financial mode.

Tools used (Development tools - H/w, S/w): Microsoft Office Suite, Bloomberg

Objectives of the project: Equity research and analysis of the companies covered by the team

Outcomes of the project: Advise the clients on whether to buy, sell or hold the stocks based on filings and company news

Major Learning Outcomes: Learnt how a buy/sell decision is arrived at, Learned how excel is used in financial modelling, Valuation of a company, Adjustments needed to reconcile extra-ordinary items to arrive at "correct" financial data.

Brief Description of working environment, expectations from the company: The JP Morgan work culture is very professional and the environment is challenging. Mostly each individual works in a different team and hence works alone on the floor making the task challenging but the learning experience is really good. The work hours can range from anywhere between 8 to 12 hours depending on the requirements. The company expects each individual to work with diligence and precision so that the team does not have to keep a check on your tasks and waste their time. You are treated like other full-time employees and hence your job is none different from theirs. This gives a lot of responsibility and you need to be precise in whatever task you are assigned.

Academic courses relevant to the project: Fundamentals of Finance and Accounting, Financial Management, Macro-economics, Securities Analysis & Portfolio Management

Name: Madhav Agrawal (2013B3A70570G)

Student Write-up

Short Summary of work done during PS-II: Created specific excel based databases for the team I was allotted

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Learn to create databases and derive results from the data

Outcomes of the project: Successfully created the database which helps in future prediction of prices of specific commodities

Major Learning Outcomes: Learnt excel to create large databases and derive specific outcomes from them

Brief Description of working environment, expectations from the company: work environment is good, work is not upto expectations

Academic courses relevant to the project: Financial Management

Name: Neel Kasat (2013B3A70670P)

Student Write-up

Short Summary of work done during PS-II: Mainly involved with operations part of the Index development and maintenance. Also had few automation projects which were mainly on Python and R.

Tools used (Development tools - H/w, S/w): Excel, python, Bloomberg, SQL

Objectives of the project: Contributing towards the operations of Index Research team with few project on automation of daily tasks to improve overall efficiency

Outcomes of the project: Created few python scripts which have been put into production for routine tasks. Also started working on few new projects which will be put into production in near task.

Major Learning Outcomes: Due-diligence, attention to detail, excel-advance, get to learn about bond markets

Brief Description of working environment, expectations from the company: very competitive in the sense that each one of the intern were given with different teams so we have to work independently. Very good learning environment from the aspect that most the people are approachable and helpful.

Academic courses relevant to the project: DRM, Principles of economics and basics of bond market.

Name: Shubham Khandelwal (2013B3A40685P)

Student Write-up

Short Summary of work done during PS-II: I was mainly involved in doing equity research.

Tools used (Development tools - H/w, S/w): MS Excel, MS Word

Objectives of the project: To make equity research report

Outcomes of the project: Equity research report

Major Learning Outcomes: Developed high proficiency in ms excel

Brief Description of working environment, expectations from the company: Work culture was very good, seniors were very helpful. I expect my internship to be converted in to full time job.

Academic courses relevant to the project: Security analysis and Portfolio Management, Financial Management

Name: Vignesh V S (2013B3A80718P)

Student Write-up

Short Summary of work done during PS-II: Equity Research. Key member in an Institutional Investor's No 1 team. Conducted in-depth analysis of the companies in the coverage. Adjusted financial models and helped in writing research reports. Helped in performing detailed fundamental research, including financial forecasting, comparative valuations and sensitivity analysis.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: To release detailed reports during earnings of the companies and when an important news breaks out about a company in our coverage.

Outcomes of the project: The team was ranked no 1 in Institutional Investor's survey of Investors in US.

Major Learning Outcomes: Communication skills, Excel modelling, writing skills.

Brief Description of working environment, expectations from the company: You are treated no differently than a regular employee. Whatever is expected of them is true for interns also. Hours would be erratic and hectic depending on which region you support.

Academic courses relevant to the project: Fundamentals of Finance and Accounting

PS-II Station: JP Morgan Chase - Technology, Bangalore

Student

Name: Aashish Kumar Passrija (2013B1A30231P)

Student Write-up

Short Summary of work done during PS-II: Built a text classifier using LSTM. Also built a GUI for the same.

Tools used (Development tools - H/w, S/w): Keras, python, javascript, flask, html, css

Objectives of the project: Text classification

Outcomes of the project: Successfully implemented a text classifier.

Major Learning Outcomes: Learnt how to practically apply neural networks.

Brief Description of working environment, expectations from the company: Working environment : good, helpful people.

Academic courses relevant to the project: Machine Learning, OOP, DSA, Information Retrieval

Name: Aman Agarwal (2014A7PS0042P)

Student Write-up

Short Summary of work done during PS-II: Python Application development. Brief work on databases.

Tools used (Development tools - H/w, S/w): Athena, Enaml, Hydra, Kdb+, JIRA

Objectives of the project: In house application development for Sales' Department

Brief Description of working environment, expectations from the company: Good

Academic courses relevant to the project: Dbms, CP, Python programming, PPL

PS-II Station: JPMC CIB Operations, Bangalore

Student

Name: Keshav Singhal (2014A3PS0238G)

Student Write-up

Short Summary of work done during PS-II: 1. Project -1

- Studied the various processes involved in Trade Bookings to suggest process improvement initiatives.
- Suggested process initiatives that are under implementation.

2. Project -2

- Understand the process relating to NR recertification.
- Streamline the process to reduce the time consumption for the task.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: To reduce time consumption for redundant tasks.

Outcomes of the project: The time consumption for the task was reduced drastically to fit in 1 day of BAU

Major Learning Outcomes: Gained an exposure to Banking Operations department of the Financial Sector

Brief Description of working environment, expectations from the company: The work allotted may not be very challenging but is time consuming requiring considerable time devotion. Teams are friendly and the work space is well organised. Overall, it is an enjoyable experience to work in JP Morgan

Name: Kartik Sastry (2014A3PS0133G)

Student Write-up

Short Summary of work done during PS-II: Project 1: Increase Auto-match Rate: Analysis was done on manually reconciled transactions on a daily basis and automation techniques were suggested.

Project 2: Analysis and Impact of integration of team: The process followed by 2 teams was analyzed and the impact was predicted based on the analyses.

Project 3: Process Improvement while performing BAU: Process Improvement for the reconciliation was suggested which will involve technology team to work on.

Apart from the above projects, I also worked on the BAU(Business As Usual) activities performed by the team, helping them to complete the work within the Service Level Agreement (SLA). I helped in preparing audit reports. I also helped in Business Control part of the team.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Improvement in the productivity and efficiency of the product & services

Outcomes of the project: Around 1 FTE (Full time Employee) save has been suggested of which 3 man-hours save on a daily basis is already implemented

Major Learning Outcomes: The major take back from the internship is the working of back office in Banking Sector from transaction processing to the project s undertaken to improve it.

Brief Description of working environment, expectations from the company: The work itself is not intellectually challenging but requires hard work and dedication. The peers are very supportive. One can have a good network with the colleagues and mentors.

Academic courses relevant to the project: Although there are not any courses relevant to the project but knowing the fundamentals of finance and banking which was covered in the course Fundamentals of Finance and Accounting helped me a lot.

PS-II Station: JPMC CIB Operations, Mumbai

Student

Name: Prerna Bhatia (2014A7PS0061P)

Student Write-up

Short Summary of work done during PS-II: Automation of Fund Services Operations processes using several strategic tools employed by the company

Tools used (Development tools - H/w, S/w): Xceptor

Objectives of the project: To increase the efficiency of the processes by reducing manual efforts and improving accuracy.

Outcomes of the project: Potential

Major Learning Outcomes: Role of automation in the banking space, project management and development

Brief Description of working environment, expectations from the company: Very friendly yet professional atmosphere, interns are treated like full time employees, good facilities provided

Academic courses relevant to the project: Computer programming, OOP, DBMS, SAPM, DRM

Name: Abhinandan Agrawal (2014A3PS0255P)

Student Write-up

Short Summary of work done during PS-II: Software testing

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: To launch new software and save some company's money

Outcomes of the project: Better software

Major Learning Outcomes: How a big firm works and how do they face real life challenges

Brief Description of working environment, expectations from the company: You have to work in a shift of 9 hours. You can get any time as one of my colleague is working from 6 p.m. to 3 a.m. The work culture is good. There is nothing like bossy culture and seniors are very friendly.

Name: Arpit Kamlawat (2014A3PS0276G)

Student Write-up

Short Summary of work done during PS-II: Reconciling JPM monthly performance data with Fund Managers monthly performance data

Tools used (Development tools - H/w, S/w): FM rec Tool

Objectives of the project: Improvement on FM Rec Tool

Outcomes of the project: Improved efficiency by on-boarding FM on the tool

Major Learning Outcomes: Reconciliation of performance no. , various methods of calculating monthly returns

Brief Description of working environment, expectations from the company: Work environment is good, all the team members are helpful you get ample opportunities for self development & growth.

Academic courses relevant to the project: FuFA & Fin Man

Name: Nishigandha Kulkarni (2014A7PS0080G)

Student Write-up

Short Summary of work done during PS-II: Validated, restructured and consolidated 850+ Standard Operating Procedures pertaining to various markets and clients. Prepared Business Requirement Documents (BRDs) for automating certain manual processes.

Objectives of the project: Restructuring and consolidation, preparation of BRDs

Outcomes of the project: Consolidated the documents into a repository, drafted BRDs

Major Learning Outcomes: Team work, soft skills, time management

Brief Description of working environment, expectations from the company: Working environment is friendly, colleagues are helpful, and however the work load on other team members makes it difficult for intern to directly learn from them. Efficiency is expected.

PS-II Station: JPMC CIB Operations- Robotics Automation, Mumbai

Student

Name: Jaya Moolchandani (2014A8PS0413H)

Student Write-up

Short Summary of work done during PS-II: I worked on 3 projects. By using the tools available in the company I had to automate the tasks which was done by the operations team manually upto now.

Tools used (Development tools - H/w, S/w): Xceptor, Automation anywhere, VB scripting

Objectives of the project: To automate the manual processes using the softwares available

Outcomes of the project: Reduced time and increased efficiency of the process

Major Learning Outcomes: Learning and understanding of the software and the RPA industry. Gained confidence and managing by managing multiple projects and dealing with people.

Brief Description of working environment, expectations from the company: Work environment is decent. Employees and Managers are very supportive. They give interns equal amount of work as an employee.

Academic courses relevant to the project: C programming,python and basic knowledge of finance.

PS-II Station: Market Data Forecast, Hyderabad

Student

Name: Animesh Okhade (2013B3A10575G)

Student Write-up

Short Summary of work done during PS-II: Report Writing

Tools used (Development tools - H/w, S/w): Office, Canva

Objectives of the project: Write abstract of various markets

Brief Description of working environment, expectations from the company: Abysmal. Office shifted three times. Stipend always delayed.

Academic courses relevant to the project: Market research

Name: Jatin Gupta (2014A1PS0599P)

Student Write-up

Short Summary of work done during PS-II: Prepared several Report Descriptions (RDs) and Promotions for the organization. Also worked in the marketing department and helped the organization in finding contacts using LinkedIn

Tools used (Development tools - H/w, S/w): Microsoft word, Microsoft excel, browser

Objectives of the project: To learn about various companies working in the field of healthcare, agriculture and food and beverages

Outcomes of the project: Learnt a lot about office culture and also about the various companies in various fields.

Major Learning Outcomes: Got a basic understanding about the market research and successfully worked under market research associate profile for this organization

Brief Description of working environment, expectations from the company: Work environment was not as good as expected because of the several changes in the office location (2 times). Company is expected to do good in future.

Name: Likil Reddy (2014A2PS0695P)

Student Write-up

Short Summary of work done during PS-II: Market Research

Tools used (Development tools - H/w, S/w): Excel Generation, Word, Data Collection and Content Writing

Objectives of the project: Study the market and analyzing it in order to generate description and promotions

Outcomes of the project: Description and different kinds of promotions of the market

Major Learning Outcomes: Market Analysis

Brief Description of working environment, expectations from the company: Environment is good, Work is boring initially but it is good after going into research team

Name: Neville Jose (2014A3PS0270P)

Student Write-up

Short Summary of work done during PS-II: Report Descriptions, Articles, and Promotions. Selected work on PESTLE, Porter's and SWOT Analysis.

Tools used (Development tools - H/w, S/w): MS Office

Objectives of the project: Analyse markets of various products

Outcomes of the project: Over 20 commercial reports prepared

Brief Description of working environment, expectations from the company: Shiftable work timings. Bad office space.

Academic courses relevant to the project: Derivatives and Risk Management.

PS-II Station: Morningstar, Mumbai

Student

Name: Ananya Dhaka (2014B3TS0961P)

Student Write-up

Short Summary of work done during PS-II: Auditing the Performance, history, Tickers on all the Morningstar Platform, Restating the Index Levels that were calculated wrong either by the calculation agent or due to missing data Ensuring the Month-end Portfolio file publish and developing a standard method to deal with failure of files understanding the working of different ETL's used to launch new Indexes and Internal calculation engine Launching new Indexes

Tools used (Development tools - H/w, S/w): SQL, internal Morningstar Tools

Objectives of the project: Dealing with Operation day to day problem and in addition improving and automating the operation work

Outcomes of the project: Improved the Operation work, develop a standard process to deal with various problem, Better understanding of how different ETL works in Index Launches and how ICE calculates Indexes

Major Learning Outcomes: how different corporate action effect the Indexes, How Indexes are calculated, what re different types of Indexes, what are the variables that effect the levles of the Index, how they are re balance and and on what bases it is decided the frequency of the re balance

Brief Description of working environment, expectations from the company: Environment is very good, from top level manager to person just senior to you, they all are very approachable and help you in understanding the methods used, reason why they are, listen to your problem and motivates you to grow. Company also make the working place a joyful place to work by conducting different activities and rewarding you, Also to build team spirit they take you for outing. In all it is nice place to work

Academic courses relevant to the project: Financial Management

Name: GABALE PRATHAMESH SATISH (2014A7PS0101G)

Student Write-up

Short Summary of work done during PS-II: I am currently interning in the Indexes New Product Development (NPD), where my work is more towards the optimizing the code, writing new code to add new capabilities, assists few teams the coding. One of the important works being supervising the Monthly Data refresh which is used directly for Reconstitution, Rebalance and for Research purpose of creating new Indexes. Coding Language such as Python, SQL ae must. Code optimization is one of the major tasks, so full knowledge of coding is essential. Use of Excel and sometimes PowerPoint also came in handy. Since I have to help other NPD Analysts with the research work, I read a lot about various methodologies from various Index Provider.

Tools used (Development tools - H/w, S/w): Spyder, SQL server

Objectives of the project: Helping in New Product Development

Outcomes of the project: Made fast Index Calculation method, EDM History generated, Code Merged, and many more

Major Learning Outcomes: Knowing a lot about Fiance and coding used in it

Brief Description of working environment, expectations from the company: It was healthy Environment, quite good for learning.

Academic courses relevant to the project: Coding, Finance Courses

Name: Mohit Gupta (2014A5PS0211P)

Student Write-up

Short Summary of work done during PS-II: My work was majorly to support the Asia-Pacific and EMEA regions Sales Director in terms of marketing collateral and business analysis reports. Along, with this sometimes my work is to support the internal teams and Chicago product management team.

Tools used (Development tools - H/w, S/w): MySQL, MS Excel, Python

Objectives of the project: Supporting APAC & EMEA region

Outcomes of the project: Turnout of clients

Major Learning Outcomes: Advance Excel, Basic SQL, Knowledge regarding various indexes in the market and their construction process.

Brief Description of working environment, expectations from the company: Working environment at Morningstar is awesome. People are approachable and helpful. Expectations from the company were well met. The mentors were giving us ample amount of opportunities to learn and progress.

Name: PATEL HARSH SHARADBHAI (2014A8PS0475P)

Student Write-up

Short Summary of work done during PS-II: Maintenance and Support work for Indexes team , Handling of urgent client queries related to Database

Tools used (Development tools - H/w, S/w): SQL, Excel, C#

Objectives of the project: Maintenance and Support work for Indexes team, Handling of urgent client queries related to Database

Outcomes of the project: Maintenance and Support work for Indexes team, Handling of urgent client queries related to Database

Major Learning Outcomes: Learning of end to end operations work within a financial advisory firm, SQL, Handling of Databases

Brief Description of working environment, expectations from the company: Work environment is supportive, Flexible timings.

Academic courses relevant to the project: SAPM, CP

Name: Reetika Srivastava (2014B5TS0959P)

Student Write-up

Short Summary of work done during PS-II: Database maintenance for the indexes team, handling urgent support requests and client queries

Tools used (Development tools - H/w, S/w): SQL, Excel, C#

Objectives of the project: Database maintenance for the indexes team, handling urgent support requests and client queries

Outcomes of the project: Database maintenance for the indexes team, handling urgent support requests and client queries

Major Learning Outcomes: Learnt about the operations of a business sub unit within a financial advisory firm, and learnt useful technical skills for database management

Brief Description of working environment, expectations from the company: The working environment is pretty good, work timings are relaxed, people are supportive.

Academic courses relevant to the project: C, OOP, SAPM

Name: THEKKEKARA NOEL (2013B4A40714G)

Student Write-up

Short Summary of work done during PS-II: 1. Server Refresh

â– Refresh data in server for the previous month

â– It is done by running code in SQL and python

â– Make sure the process ran smoothly and analyze the data points

new concepts “

A. Definition and types of various data points

B. SQL concepts 2. Research on MLPs

â– The investor concerns on Master Limited Partnerships, their pros and cons

â– Brief research on tax structure of MLPs

â– Comparing cases from an institutional investor and individual investor point of view

new concepts “

A. Concept of MLPs

B. Basic Tax structure in U.S 3.API creation for Data validation

Tools used (Development tools - H/w, S/w): MS Excel, SQL, Python

Objectives of the project: Sever data Refresh, API creation, Reports QA, Client Query Handling, Introduction of spin-off securities

Outcomes of the project: Saved more than 50 Man hours by creating API, Reconstitution and Back-testing ran smoothly owing to the data refresh

Major Learning Outcomes: Data Handling,

Brief Description of working environment, expectations from the company: The company conducts training on SQL,Excel and Python. The employee are helpful. You need to take up responsibilities as time move by.

Academic courses relevant to the project: Financial Management, Data Base Management

PS-II Station: National Council of Applied Economic Research, New Delhi

Student

Name: Abhishek Agarwal (2013B3A10495P)

Student Write-up

Short Summary of work done during PS-II: The major task was to recode the raw data of NSSO and extract tables related to different indicators. The data was then analyzed to put forward vulnerabilities persisting in our country and gaps related to programmes and schemes launched by the central government to provide social protection to the vulnerables.

Tools used (Development tools - H/w, S/w): Stata, MS Excel

Objectives of the project: Social Protection Assessment and Gap Analysis

Outcomes of the project: Policy recommendation and Identification of vulnerable population

Major Learning Outcomes: Practical knowledge of how policy makers and policy influencers work and the way data is collected on primary basis in a country as huge as ours.

Brief Description of working environment, expectations from the company: The environment is very conducive if someone is looking for a kick start in the field of economic research. The fellows here are really supportive and you will have different perspective towards real life problems when you'll get out from this place if you were able to utilize what this council offers.

Academic courses relevant to the project: Econometrics, Macroeconomics, Microeconomics, Industrial Economics

Name: MADHAV GUPTA (2014B3PS0951P)

Student Write-up

Short Summary of work done during PS-II: I was in the Industry and Infrastructure Division of the NCAER organisation. And my mentor has her expertise and interest in Macroeconomics and International Economics, so my projects were also aligned with her interests. So, I worked in various projects like Skill India Project where I did the Census data management and the other project was related to the Business Expectation Survey which is quarterly carried out by NCAER. So, I wrote the chapter regarding the Political Confidence Index in the BES Report.

Tools used (Development tools - H/w, S/w): STATA, MICROSOFT EXCEL

Objectives of the project: The main objectives of the project were to understand the sentiment of traders and dealers about the state of the economy and about the policies of the state.

Outcomes of the project: The first project is not completed yet, so its outcomes can't be stated but regarding the second project of BES, it can be said that the major outcome of this project was that we were able to capture the sentiment of the traders and dealers and got to know what they expect from the government of the day.

Major Learning Outcomes: Major learning outcome from the first project was that I got to know about the data management and data collapsing and from the second project I got to know about the processes involved in the successful conduct of the survey and converting the survey into a academic or a policy document that can be used by the authorities to make relevant policy decisions.

Brief Description of working environment, expectations from the company: The working environment in the company was very friendly and all the seniors treated me very nicely and offered as much help as they could whenever it was needed. And one can expect a lot of a very intensified Research work into Economics and its component branches from this institution.

Academic courses relevant to the project: Macroeconomics, Econometrics, SAPM. Statistical Methods

PS-II Station: National Entrepreneurship Network, Bangalore

Student

Name: Garv Nagpal (2013B1A10885G)

Student Write-up

Short Summary of work done during PS-II: Conduct surveys among NEN beneficiaries and collect data which was later used to trace how well all the initiatives of the company are doing.

Tools used (Development tools - H/w, S/w): Excel, Survey monkey

Objectives of the project: Descriptive data collection, Analysis and prediction

Outcomes of the project: By conducting surveys we were analysing growth in every country

Major Learning Outcomes: Learned about descriptive data analysis and data collection methods like surveys. Moreover I learned about making predictions based on the data we had collected.

Brief Description of working environment, expectations from the company: The working environment is great. The shift is from 9-5 and on the first day teams are allotted.

Name: Kaustubh Mahesh Churi (2014ABPS0643P)

Student Write-up

Short Summary of work done during PS-II: Being a marketing intern who had some knowledge in Graphic Designing, I used to design creatives and ideate, develop and implement marketing campaigns for the organisation. Global Entrepreneurship Summit 2017, world's largest entrepreneurship event was held in India for the first. The entire branding campaign for Road to GES events was allotted to me as my major project during the internship.

Tools used (Development tools - H/w, S/w): Photoshop, Illustrator, InDesign

Objectives of the project: Develop and Design a marketing campaign for Road to GES 2017

Outcomes of the project: The campaign was a huge success resulting more than expected footfall for the event.

Major Learning Outcomes: Graphic Design Principles, Corporate Designs

Brief Description of working environment, expectations from the company: The marketing team is the coolest and the most hard working team in the foundation. The expectations and freedom provided varies from mentor to mentor. Graphic Designing, being a creative role, I was given a huge freedom to play with designs, although I had to stick to certain branding guidelines. As I said, it depends a lot on the manager, so not everyone got the same kind of freedom and responsibility as I did.

Name: Nikhil Poul (2013A3PS0317P)

Student Write-up

Short Summary of work done during PS-II: learning Articulate Storyline 2 Software to help in editing lessons. coming up with story script.

Tools used (Development tools - H/w, S/w): Articulate Storyline 2

Objectives of the project: Revamping existing content

Outcomes of the project: Learning Articulate

Major Learning Outcomes: Articulate Storyline 2

Brief Description of working environment, expectations from the company: Very good environment.

Name: Pranjal Goswami (2013B5PS0569G)

Student Write-up

Short Summary of work done during PS-II: In my PS2 (Wadhwani Foundation NEN), I worked for Global Expansion in South East Asia I did the following work :- Created mailers, registration forms and digital fliers for mentoring clinics and expert sessions held in Indonesia and Malaysia. Collected information such as pros and cons as well as data points for entrepreneurship ecosystem in Indonesia and Malaysia. Tracked the details of some universities in Bangladesh through Learnwise. Did research on skill development sector in Bangladesh which included the following things: Information about availability and access to skills training and the facts about skills mismatch. Facts about skills mismatch in Bangladesh. Tracked institutes and their details in Indonesia and Bangladesh according to their rankings in order to find suitable places to conduct mentoring clinics and expert sessions. Found out mentors for finance, marketing and IT sector in Indonesia through LinkedIn. Made lists of all Mentoring Clinics and Expert Sessions in both Indonesia and Malaysia.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft word, Microsoft Powerpoint

Objectives of the project: Creating mailers, Doing research on various topics, Finding and tracking details of institutes, Finding mentors

Outcomes of the project: The following were the outcomes of my project: Research conducted on various topics such as skill development sector in Bangladesh, entrepreneurship ecosystem in Malaysia, Philippines and Indonesia. Many mailers, registration forms and digital fliers created for mentoring clinics and expert sessions in Indonesia and Malaysia. Details of institutes in Indonesia and Bangladesh tracked in excel sheet. Mentors and their profiles found out through LinkedIn.

Major Learning Outcomes: The following were my major learning outcomes during my internship:- Creating mailers and registration forms for mentoring clinics and expert sessions. Finding out various details about universities and institutes and track them in excel sheet. Managing large amounts of data in excel.

Brief Description of working environment, expectations from the company: The working environment in my PS2 (Wadhwani Foundation NEN) was pretty good. There was great quality of work. I could gain experience in many kinds of work. If someone is keen on learning there are plenty of opportunities. The senior leaders always encourage talent. The work environment is informal and flexible. The colleagues are friendly. The working hours are very flexible. The Wadhwani Foundation has great initiative, great middle management team and has a great worldwide presence. My expectations from the company include. Getting more mid-level managers. Monetizing some of the fronts so that upgrading can be faster and with better resources.

Name: Vatsal Tiwari (2013B2A10686G)

Student Write-up

Short Summary of work done during PS-II: I'm working as a content writer for GSN - Global Skills Network team. We write content for skills based lessons.

Tools used (Development tools - H/w, S/w): Articulate Storyline 2

Objectives of the project: To write content which will help to create interesting lessons which eventually will help to develop skill set amongst the emerging economies

Outcomes of the project: Helped my team to write content for new lessons

Major Learning Outcomes: Articulate Storyline

Brief Description of working environment, expectations from the company: Work environment is really good and people around here are really helpful but too much of interference from HR team.

Academic courses relevant to the project: You just need to be creative to come up with new exciting ideas for lessons.

Name: Yash Mehta (2014B5TS0967P)

Student Write-up

Short Summary of work done during PS-II: My project was to enrich the intelligent information database for Entrepreneurs. I have done Data Mining to rate different service providers and finding most frequent asked questions by entrepreneurs. Later on, I uploaded those FAQs on wfnen website using Wordpress.

Tools used (Development tools - H/w, S/w): Wordpress, Excel

Objectives of the project: To Create Intelligent Information Database For Entrepreneurs

Outcomes of the project: Database is available for Entrepreneurs on NEN Website

Major Learning Outcomes: Data Mining, Web designing

Brief Description of working environment, expectations from the company: Very good culture and working environment in the company. Good staff and timings.

Academic courses relevant to the project: Entrepreneurship

PS-II Station: Nomura Global Finance, Mumbai

Student

Name: Rithvik Bhonagiri (2014A4PS0286H)

Student Write-up

Short Summary of work done during PS-II: The Structured Deal Review process is one element of a wider control framework that ensures the accuracy of trade bookings and the correct representation of trades in the risk booking systems. It validates all inscope deals, all economic parameters captured in the trade booking are thoroughly reviewed, documented and recorded. Specifically the deal review process addresses the risk of booking errors or misrepresentation in books & records for trades where there is no direct link between the trade ticket and the final trade confirmation, together with other non-standard and complex trade types

Tools used (Development tools - H/w, S/w): Excel, VBA, In-house softwares

Objectives of the project: Cutting down number of trades

Outcomes of the project: Business as usual

Major Learning Outcomes: Understanding markets, financial derivatives, trade structure as well as expected payoffs at different time intervals

Brief Description of working environment, expectations from the company: Very comfortable work environment with long working hours

Academic courses relevant to the project: DRM, FOFA

PS-II Station: Nomura Global Markets, Mumbai

Student

Name: Aayush Gupta (2013B3A30652P)

Student Write-up

Short Summary of work done during PS-II: 1. Delivery of structured products and solutions to regional Sales, in liaison with Trading, Quant and Research teams globally (predominantly Singapore) 2. Directly supporting sales and trading desks with daily pricing requests 3. Generation of product ideas on a regular basis, and assistance in day-to-day Sales-Client interactions. 4. Facilitate marketing by generating pitch-books and other client-centric materials. 5. Back-testing/Scenario Analysis on structured products and understanding how market conditions affect their return 6. Support trade execution limited to term sheet preparation

Tools used (Development tools - H/w, S/w): Proprietary Software, Excel, VBA

Objectives of the project: Business as Usual - Structuring, Pricing and Risk Analysis of Structured Products

Outcomes of the project: 1. Grasp risks associated with structured products and understand their bearing on the PV of the products along with how to charge on these risks and price products 2. Keep up to date with markets & understand how they relate to products offered 3. Make pitch-books for sales-client interaction 4. Back-testing + Scenario Analysis on structured products

Major Learning Outcomes: Mentioned Above

Brief Description of working environment, expectations from the company: Chance to work with higher up executives Inclusive approach friendly colleague

Academic courses relevant to the project: Derivatives and Risk Management Financial Engineering

Name: Anirudh Agarwal (2013B3A70644P)

Student Write-up

Short Summary of work done during PS-II: I was the part of the Credit Structuring Team working directly under the Executive Director of the team. My work involved daily business process runs required to generate certain reports and monitoring of cashflow matching. Along with the daily work, I was assigned certain mini projects to automate certain processes using VBA. The third aspect was supporting the team in certain ad-hoc tasks which had a quarterly/monthly frequency.

Tools used (Development tools - H/w, S/w): Nomura proprietary softwares+ Excel VBA + Python

Objectives of the project: Since there was no one specific project, the objective was to automate certain tasks in the most optimised and non-limiting format.

Outcomes of the project: I was able to work on 2 mini projects where the task was able to automate certain tasks using VBA which was able to save the team a good amount of the time.

Major Learning Outcomes: Coding in VBA + Excel tools

Brief Description of working environment, expectations from the company: The work environment is very conducive and independent in nature depending on the team. The work isn't hectic but the work hours can exceed 12 hrs on some days. The office has subsidised mess which runs 24*7, office gym and a tea/coffee area on each floor. The work hours are strict in certain sense but not imposed on you. Overall it was a good experience.

Academic courses relevant to the project: DRM, SAPM, Money Banking and Financial Markets, International Economics

Name: Jahnvi kaushik (2014A1PS0698P)

Student Write-up

Short Summary of work done during PS-II: Voyager- Nomura FinTech Partnership

Tools used (Development tools - H/w, S/w): Microsoft excel and PowerPoint

Objectives of the project: To select fintech startups for improving the operations in CMIB

Outcomes of the project: Start-ups selected for further engagement to improve the efficiency of the current operations

Major Learning Outcomes: Great exposure

Brief Description of working environment, expectations from the company: Good working environment

Name: Tanmay Utkarsh (2014A3PS0300P)

Student Write-up

Short Summary of work done during PS-II: I worked a part of the core team for the Nomura Voyager FinTech Partnership Program, a unique FinTech focused accelerator aimed at identifying and harnessing innovative solutions in the Capital Markets and Investment Banking Industry. The core team co-ordinated with startups from all over the world and gauged the alignment of their offerings to Nomura's business requirements. After successfully identifying a cohort of eight startups, we oversaw the conduction of a Proof of Concept with the various Nomura divisions. The startups and the divisions presented the developed PoCs to the Nomura Group senior management on 15 November, 2017. In addition to this, I also worked on a short project with the Strategy team to identify the impacts of MiFID II on Wholesale Banking.

Tools used (Development tools - H/w, S/w): Microsoft Excel and Powerpoint

Objectives of the project: Voyager- To identify startups to co-create solutions with. To assess the impact of MiFID II on the wholesale banking industry.

Outcomes of the project: Identified a cohort of eight startups.

Major Learning Outcomes: The project(s) gave us tremendous exposure to the way the corporate world functions. We had regular access to the Nomura senior management and the frequent engagement

helped us learn a lot. The program also helped in acquainting me with the various FinTech offerings in the market and how they can be used to strengthen the core processes of a business.

Brief Description of working environment, expectations from the company: The work hours are usually from 8.30 AM-5.30 PM. The work environment is extremely conducive for interaction with seniors in the team. Doubts are clarified regularly and effectively.

Academic courses relevant to the project: Basic knowledge of Financial instruments is required.

PS-II Station: Nomura Global Risk, Mumbai

Student

Name: Abhisumat Barthwal (2013B3A80651P)

Student Write-up

Short Summary of work done during PS-II: I have been involved in the new project of migrating India and Asia level margin reports to a more robust platform for Business Intelligence. This has helped me to gain expertise in a new third party software called Business Objects. Business objects has a lot of powerful tools available for representation, modeling, and analysis of the financial transaction. Migration of these reports has allowed me to develop logic and queries of my own. This has posed to be a challenging task. It was initially allotted to me so that later I can distribute my experiences and help others to migrate different reports. Nomura also provides glimpses of investment banking business and how different trades are executed. Work here tests your knowledge and make one read and understand exotic derivative products and their valuation. VBA excel is used largely to manipulate data and come up with faster and efficient working models. I am currently involved in making one such model help improve the risk management in prime brokerage side of the business. This tool facilitates the consolidation of different margining rules and reducing operational inefficiencies in the team. It will help in making quicker decisions and providing a better live trade support system for the business side.

Tools used (Development tools - H/w, S/w): VBA Excel, SAP

Objectives of the project: To improve operational efficiency of the team

Outcomes of the project: Reduced 11 man hours for the team on a weekly basis

Major Learning Outcomes: ¢ SAP/Business Objects

¢ Developing VBA codes and implementation of financial models through it

¢ Understanding SQL related query structuring

¢ Getting exposure to sell side of Investment Banking through wholesale business activities of

Nomura

¢ Financial quantitative modelling

Brief Description of working environment, expectations from the company: Working environment in Nomura enriches one to be competent and have a balanced understanding of finance and technical side. The company expects the students to have good coding skills/an aptitude for it. Along with it a thorough understanding of financial derivatives products and understanding of how Investment Banks use them.

Academic courses relevant to the project: Financial Engineering, Derivatives and Risk Management, Securities Analysis and Portfolio Management, Probability and Statistics, Econometrics, Applied Econometrics

Name: Dhruv Jain (2013B3A70826G)

Student Write-up

Short Summary of work done during PS-II: Developed tools in Python to automate the various manual activities being done by the team in order to increase efficiency. Also developed newer models of risk calculation for the trades being undertaken by the bank

Tools used (Development tools - H/w, S/w): Python

Objectives of the project: To increase efficiency of current processes and reduce manual work

Outcomes of the project: Multiple tools in Python which were satisfying the fore mentioned objectives

Major Learning Outcomes: Understanding risk calculation and learning automation using Python

Brief Description of working environment, expectations from the company: Other employees and manager were very helpful in the entire learning process. Expectations are of interns proficient in basic finance and understand coding and can be helpful and willing to learn.

Academic courses relevant to the project: DRM, SAPM, OOP, DSA

Name: Harshit Chand Sajja (2013B3AA0686H)

Student Write-up

Short Summary of work done during PS-II: I helped in SIF attestation process CRD - IV. I helped in making suggestion for some internal frameworks. I made the user manual for an internal tool.

Tools used (Development tools - H/w, S/w): Word, PowerPoint.

Objectives of the project: Help with BAU.

Outcomes of the project: Completion of SIF attestations. User manual for an internal tool.

Major Learning Outcomes: Regulatory knowledge.

Brief Description of working environment, expectations from the company: The working environment is pretty flexible. The timings will depend on the team. The company expects you to help the team in any way possible.

Academic courses relevant to the project: No relevant courses are present for my project.

Name: Ronit Chidara (2013B3A40706H)

Student Write-up

Short Summary of work done during PS-II: There was no concrete project allotted to me. My Executive Director was pretty excited about the applications of Technology in the Finance field, FinTech to be precise. So, he urged me to start working with Python and also to get familiar with Machine Learning. Keeping aside the fact that there wasn't much that I could do directly related to finance, I had a lot of opportunity/time to learn stuff that would help me within and outside this organisation. Furthermore, this familiarity of mine with Python gave me a head start when the time came for a major technological overhaul within the Risk department; it dealt with Python. I also got involved in these because I had been one of the few people in the team who were comfortable with Python. Of course, I was allotted a couple of tasks sometimes that seemed like sheer drudgery. But, such tasks are bound to come your way in any company you go to, some time or the other.

Tools used (Development tools - H/w, S/w): Python (major), SQL

Objectives of the project: Collection/Pre-processing of data for Machine Learning applications, and other minor automations

Outcomes of the project: Consolidated reports that could be used for machine learning applications, and also to make the data checks a little efficient by providing everything at one place

Major Learning Outcomes: Comfortable with Python; Got into Machine Learning and Algorithms, both of them being fields of immense learning (if interested)

Brief Description of working environment, expectations from the company: Cool team; great amenities; good food; Employee-friendly company; Nothing to complain about if only the work were more in line with our courses/expectations.

Academic courses relevant to the project: Derivatives and Risk Management

Name: Swapnil Agarwal (2014A2PS0494H)

Student Write-up

Short Summary of work done during PS-II: My work was based on detection of Abnormal moves in VaR. If there is abnormal move in calculated VaR from previous trading day, this could be because of genuine issue or it could be because of Data Quality issues. So, I need to detect if the move is because of Data Quality Issues and if there is any adjustments to be made to solve the issue.

Tools used (Development tools - H/w, S/w): Python, Machine Learning

Objectives of the project: To detect Anomaly in VaR moves

Outcomes of the project: Good

Major Learning Outcomes: Python, Machine Learning

Brief Description of working environment, expectations from the company: Nomura has great work culture and opportunities to grow. The management is also supportive and understanding of employees needs. There is good growth prospects also. The teams are self motivated with supporting managers. Subsidised food and travel is plus point. Nomura expects from you to give your 100% and constantly learn new things. They also want you to be in touch with modern applications and technology to implement.

Academic courses relevant to the project: Machine Learning, FRAM

PS-II Station: PricewaterhouseCoopers (PWC), Bangalore

Student

Name: Abhinav Sen Sharma (2014A2PS0595P)

Student Write-up

Short Summary of work done during PS-II: Worked in various infrastructural and transport logistics projects including the Inter-Modal Station Varanasi, an innovative project combining 4 modes of transport at one place, an initiative by PMO.

Tools used (Development tools - H/w, S/w): Word, Powerpoint & Excel

Objectives of the project: Detailed Project Report for consultancy services for establishment of IMS Varanasi

Outcomes of the project: Development of Concept plan, Market assessment and commercialization plan of the project.

Major Learning Outcomes: Learnt primary interaction with clients and understood the A&M of consultancy firms.

Brief Description of working environment, expectations from the company: Had a very good experience in terms of work exposure. Handled lot of good clients. Gained understanding of different industries
Cons: Can be more active in internal job transfers and role change. Can look for some

secondment opportunities to the employees. Major takeaways are Variety of work, Flexibility, Vacation, Global Mobility, Leadership

Name: Divyank Agarwal (2014A2PS0491H)

Student Write-up

Short Summary of work done during PS-II: Nature of the work was to provide Consultancy Services to Public Sector clients and to improve the overall productivity and efficiency of the processes which were critical to the client deliverables. Broadly, 2 engagements were undertaken, i.e. Hubballi-Dharwad Smart City and Shivamogga Smart City along with many other tasks such as preparing project databases for internal usage, carrying out market research for sector profiling, etc.

Tools used (Development tools - H/w, S/w): MS-Word, MS-Excel, MS-PowerPoint, MS-Access

Objectives of the project: To perform the roles and responsibilities of a Consultant as a PMC for 2 Smart Cities in Karnataka: Hubballi-Dharwad and Shivamogga

Outcomes of the project: Quantum of work included carrying out Feasibility Studies, Social Impact Assessments, Market Research, etc. Also, to develop Redevelopment Proposals and Housing Development Proposals for Slums, preparing Tentative Budgets for Rehabilitation of Markets, preparing Socio-Economic Reports and developing Project Databases.

Major Learning Outcomes: Hands-on Experience, Communication Skills, Negotiation Skills, Knowledge on working of PPP Projects, making professional Reports and Presentations, working in a Team, etc.

Brief Description of working environment, expectations from the company: Working environment is exactly how a big corporate firm's environment should be. You get to experience how does it feel to work in one of the Big 4. Work culture mostly depends on the specific team one is allotted, but there are a lot of perks and benefits associated.

Academic courses relevant to the project: Basic knowledge of Civil and Finance will suffice.

Name: Venkatasai krishna (2014A2PS0556H)

Student Write-up

Short Summary of work done during PS-II: Understanding the Problems of Transportation, Fare system of Mumbai. Finding the fare policies and fare slabs of each mode of Public transportation. Finding the fare increasing mechanisms and analysing increment of fares from last few years. Making case studies about different fare systems across world. Advantages and disadvantages of each fare system available in world. Getting the data or statistics of Mumbai to propose a alternate fare system, that is flat fare system. Analysing the results of implementation of flat fare system. Applying the Zonal fare system to Mumbai. Dividing the Mumbai into 10 zones based on population, fare, distance to cross the zone. Finding old fares according to zonal fare system. Suggesting the new fares according to the zones.

Tools used (Development tools - H/w, S/w): Google chrome. Microsoft Office.

Objectives of the project: 1. Prevalent fare system in India 2. Multiple approach to sustainable fare strategy. 3. Integrated fare system with Mumbai as case study. 4. Maximizing the revenue of government while providing customer convenience with integrated fare system.

Outcomes of the project: âžĢ Financial benefits like zero revenue loss or increased revenue for government.

âžĢ Increase the patronage of the city transportation.

âžĢ Customer satisfaction and convenience.

âžĢ Faster boarding times.

âžĢ Reduction in fraud.

âžĢ Reduce administrative costs.

âžĢ Easy for backend operations.

Major Learning Outcomes: Detailed analysis of public problems. Improved skills at Microsoft Office. Making professional Presentations and Reports

Brief Description of working environment, expectations from the company: Though work is neither related to Civil nor finance the way they make us to learn how to do the work is not bad. In starting the days practice school small works like data collections, making small reports and PPTs, editing the proposals for government projects. Once the project has started work pressure increase highly, which has to be done alone. The detailed analysis of problem is easy but the required data or statistics to solve them is a major problem. Once data is obtained it is easy to solve or conclude the project. But at end some solutions has given with collected statistics. Teammates were always busy with their own project, and the manager was in Mumbai and I couldn't meet him in once. I had discussions with director on every Monday about work done in last week and to be done in current week. As we informed to learn financial concepts, we have expected a financial work. But highly disappointed with given work as this does not help my career at all.

PS-II Station: PricewaterhouseCoopers (PWC), Chennai

Student

Name: Ayush Umrao (2014A2PS0515H)

Student Write-up

Short Summary of work done during PS-II: Worked with the PMC(Program Management Consultant) team of PwC for CSCL (Chennai Smart City Limited). Helped in facilitation, execution and implementation of the smart city projects. This involved research, presentations, meeting key govt. officials, seeking out govt. orders and permissions from various stake holders, conducting workshops(technical and non-technical), releasing tenders, RfPs(Request for Proposals), hiring of consultants for DPR(Detailed Project Report), EOIs(Expression of Interests) etc. Made proposal videos and helped in publicity and press/media.

Tools used (Development tools - H/w, S/w): Microsoft office, Adobe Photoshop, Adobe After Effects, Adobe Premiere Pro, Autodesk 3DSMaX

Objectives of the project: To facilitate, execute and implement smart city projects and help the Greater Chennai Corporation and Chennai Smart City Ltd. by managing everything.

Outcomes of the project: Improved social skills, presentation skills.

Major Learning Outcomes: Project Management and MIS (Management Information System) handling.

Brief Description of working environment, expectations from the company: Working environment is nice, the team was amazing. Project manager and senior consultants are really friendly and they helped me out a lot initially. Great learning experience. Only expectation is that you should be a fast learner.

PS-II Station: PricewaterhouseCoopers (PWC), Gurgaon

Student

Name: Ankush Kumar (2014A2PS0781P)

Student Write-up

Short Summary of work done during PS-II: The work and projects allotted to me are quite interesting at the same time I am getting to learn a lot of things as it is giving me an exposure to go through real life events and present government initiatives. For my BD project of Himachal Pradesh I got to know it seeks to harness the fullest potential of the state for development of tourism. This state is beautifully bestowed with unique beauty and has lush green valleys, snow covered Himalayan ranges, welcoming people, serene and peaceful environment. Despite of all the above factors, there are many places in Himachal Pradesh which are lesser known and are unvisited. Himachal Pradesh with its serene and mesmerizing beauty has no wonder attracted millions of tourists from across the world, but there still exist numerous unexplored destinations that call for our arrival each day of the year. There are diverse locations in the small state of Himachal that are yet to be explored by the tourists similarly for Nepal, Sri Lanka and Rajasthan too. The underlying reasons are that either the regions are underdeveloped, not safe enough owing to mountainous terrains and bumpy, irregular paths or maybe due to extreme climatic conditions. For repository part availability of collated information, on external and internal assistance for project development support in the country can serve as a vital repository and an

important catalyst for infrastructure development. This information can be utilized by the line ministries and various government agencies to track the support available through various sources and also help in channelizing the same to the target geographies and sectors. For the Varanasi Smart city project we went to Varanasi and focused on the waste management solution. With the help of GPS Map Camera we did the Geo Tagging of all the Kudaghars along with the pic of every Kudaghars. We asked the local sanitary workers for the nearby places names from where the wastes are dumped at the specific kudaghar. With the help of Latitude Longitude App we found out the coordinate of these places. Out of the 46, there were some places where the dumping is now stopped and the capacity is also zero as per the VNN list. So finally after doing the survey we were left with 33 locations of Kudaghar of our interest. We identified three location as Transfer Stations which includes Bakriya Kund, Bhavnia Phokhari and IDH Golconda. We marked all the Kudaghars and Transfer stations on the map with the help of Autocad. Overall it was a great learning throughout the PS.

Tools used (Development tools - H/w, S/w): Ms- office, Auto Distance App, GPS Map Camera.

Objectives of the project: Tourism Development Proposal, Varanasi smart city project, figure out tourism tenders

Outcomes of the project: Varanasi smart city report was submitted in Ministry.

Major Learning Outcomes: Learnt to make DPR, got exposure of real time projects and field experience.

Brief Description of working environment, expectations from the company: Working condition was awesome. Nice people around us always. Our Project Manager, Arpit Agarwal Sir invested his full effort in guiding the team. This project would have been a distant reality without the constant guidance provided by them. A special thanks goes to my team mate, Rohit Bansal and Rahul Verma, who helped me to assemble the data and gave suggestion about the task 'Repository of Govt Schemes'. It was my pleasure to work with Rahul Mallik Sir and Arun Sir for the Varanasi Smart City project who helped to get insight of field experience of project. Last but not least, I have to appreciate the guidance given by other supervisor and whole PwC family for creating such a friendly ambience to work. My expectations were fully met in PwC Gurgaon.

Academic courses relevant to the project: Environmental Impact Assessment, Principal of Management. Highway Engineering.

Name: Archit Pateria (2013A3PS0308P)

Student Write-up

Short Summary of work done during PS-II: Worked from client (Energy Efficiency Services Limited) office on Municipal Energy Efficiency Program under the AMRUT scheme which aims to replace existing

water and sewerage pumps with energy efficient ones in 500 cities across India. Reviewed, finalized and submitted Investment Grade Energy Audit Reports and financial models prepared by energy auditing agencies to the Regional Officers of EESL. Prepared presentations for training of Urban local body officials and EESL team of various states. Prepared presentations for State Level Technical Committee meetings.

Tools used (Development tools - H/w, S/w): Microsoft Excel, PowerPoint, Word, MATLAB

Objectives of the project: Achieve energy efficiency and saving on a national level through pump replacement pan India

Outcomes of the project: The project has not reached the implementation phase and so real outcomes cannot be quantified.

Major Learning Outcomes: 1. Gained in-depth technical knowledge about pump and motor.

2. Learned financial modeling.

3. Learned how to deal with the client and government officials.

4. Learned how to tackle bottlenecks and problems that arise in such a large scale project.

Brief Description of working environment, expectations from the company: The work environment at PwC is very healthy. The colleagues are very supportive and there is no unnecessary pressure from seniors.

Academic courses relevant to the project: Electric Machines, Power Systems, Technical Report Writing

Name: Harrshit M Kansal (2014ABPS0883P)

Student Write-up

Short Summary of work done during PS-II: undertook a major project and multiple minor (miscellaneous) projects. The major project was a research project on Electric vehicles (EV) involving the study and analysis of recent trends and developments in EV space. Also, I had to develop a statistical model in order to make projections of future values of Annual EV sales, EV market shares and EV stocks in the world's leading markets. The miscellaneous other projects were in the domain of advisory and consulting services to the clients of PwC. I worked under the strategic business unit of Government Reforms & Infrastructure Development (GRID) in the Advisory line of service. My projects were in the energy sector. The clients were government power sector undertakings such as Madhya Pradesh Urja Vikas Nigam Ltd. and electricity regulatory commissions such as Jharkhand State Electricity Regulatory Commission (JSERC). The various projects given to me included preparing regulatory orders, filing tariff petitions, making detailed project reports and spreadsheet models, delivering presentations etc.

Tools used (Development tools - H/w, S/w): The work here involved heavy usage of Office softwares such as MS- Excel, MS- Word & MS- Powerpoint. So, a higher level proficiency in these is definitely going to help a lot.

Objectives of the project: The major project involves performing a comprehensive study of EVs. Broad objectives are to: 1. Find out the leading countries in the Electric Vehicle (EV) space and select them for performing all analyses. 2. Compile all the governmental policies, regulations, incentives & subsidies for the encouragement of adoption of electric vehicles in various countries. 3. Study and list all the targets set up by governments of selected countries, in the EV space. 4. Create a statistical model to make the future predictions of the annual sales of EVs, the market shares of EVs and the total stock of EVs in the selected countries for the period 2017-30. 5. Make all the required projections for the future and compare the future market shares of EVs to the present ones in all the selected countries. 6. Perform the aggregation of both, the estimates of annual EV sales as well as the estimates of total stock of EVs per year in the selected countries, in order to get a global overview. 7. Provide estimates of the number of chargers required for the selected countries in 2020 and 2030 and compare them to the targets for charging infrastructure (if any). The objectives of other allotted projects were: 1. Development of a true-up order of Annual Revenue Requirement for 2015-16 for JSERC, after obtaining its approvals. 2. Another project involved the development of a Multi-year Tariff (MYT) order of JSERC for a period of 5 years (2016-17 to 2020-21). 3. ERP Implementation at MP Urja Vikas Nigam Limited- The work involved segregation and classification of hundreds of hard-copy files of the organisation into various categories and sub-categories, their numbering and preparation of a chart of classification using a suitable software.

Outcomes of the project: 1. A comprehensive study of electric vehicles was performed, which includes their history, development, technology, types and components.

2. The present scenario of electric vehicles around the world was analysed and the leading countries in the EV space were identified for further study.

3. The presence of charging infrastructure in various countries was studied and the availability of charging infrastructure versus the stock of electric vehicles in each country was analysed.

4. Based on collection of information from various sources, exhaustive lists of both governmental incentives, subsidies and incentives for electric vehicles and of the national targets in all the selected countries were prepared.

5. A statistical model was developed to project future values of annual EV sales, EV stocks and EV market shares in each of the countries. Analysis was done for each country individually.

6. Finally, the predicted values of various parameters were compared with the targeted values. Suitable conclusions were drawn and recommendations were made based on the above.

7. The True-up & MYT documents were successfully prepared for JSERC and the assigned work in ERP implementation was successfully completed.

Major Learning Outcomes: 1. Gained knowledge of various statistical tools and predictive modelling

2. Enhanced skills in MS-Excel, MS-Powerpoint & MS-Word softwares

3. Gained a thorough knowledge and understanding of electric vehicles, electric vehicles industry and the potential of future adoption.

4. Learned about the power generation, transmission & distribution structures of various states of India

5. Learned about the revenue model of power generation and distribution in various states.

6. Improved presentation, communication and other soft skills.

Brief Description of working environment, expectations from the company: The projects allotted to students from BITS are generally advisory and consulting projects in government sectors such as energy, infrastructure etc. The work may require one to travel to another city from the base office location. So, one must be prepared for that. This was the case with me as I worked from the client™s location, while my base office was in Gurgaon. The working environment mostly depends on the work location (corporate office or client™s office), city and very importantly the closest team members you are working with. In my case, the team that I worked with was really very friendly and supportive. The team members gave me time to settle down. Also, I frequently used to interact with senior members of the team such as Associate Directors and Principal Consultants and really got to learn a lot from them. I believe it is a very good opportunity as you are getting to interact with such senior people in the corporate world so early on in your career. The projects involved a lot of discussions and teamwork. I undertook a research-based project and multiple other projects to provide advisory and consulting services to the clients. Good guidance was provided by the team members regularly. So, the above was my experience. I cannot say much about the head office in Gurgaon as I didn™t work from there. Please note that the first few days at the company will be quite hectic, but it becomes better as one starts settling down.

Academic courses relevant to the project: Project Appraisal, Probability & Statistics, Principles of Economics, Techniques in Social Research, Technical Report Writing

Name: Ishan Singla (2014A3PS0204P)

Student Write-up

Short Summary of work done during PS-II: The Project Assigned to me was Independent Review of Energy Audit of Rajasthan Discoms 2015-16. The project is based on AT&C loss estimation of the three Distribution Companies in Rajasthan. The work involved providing quality client deliverables and travelling to different parts of Rajasthan for Audit visits. I am working out of the Client Location - Jaipur,

Rajasthan. The project involves auditing of the three Distribution Companies, namely, JVVNL, JdVVNL, and AVVNL, located in, Jaipur, Jodhpur, and Ajmer, respectively. The primary goal of the project is to obtain realistic figures of what are known as Aggregate Technical & Commercial (AT&C) losses for each of the Subdivisions. The same is to be obtained for each Circle and eventually for each of the three Distribution Companies. Rajasthan Power Distribution Companies intended to engage a Consulting firm organization to conduct an Independent Review of Energy Audit of all the 532 Subdivisions of Rajasthan Discoms for Financial Year 2015-16. This project is completely done on the client location and is a great opportunity for someone who has expertise in Electrical & finance. The majority of the work is in MS-Excel, in which various tools are to be used to compute the final result from GBs of data available. It helps in learning data management and improves speed in Excel. It is an internship where you work both as an analyst and a consultant.

Tools used (Development tools - H/w, S/w): Advanced MS-Excel, MS Word

Objectives of the project: To arrive at a true and fair picture of AT&C losses for each subdivision, prevailing status of the various billing parameters.

Outcomes of the project: Calculation of the AT&C losses of JVVNL and submission of detailed report.

Major Learning Outcomes: Having received the opportunity to work on a live project, we were exposed to actual on-field challenges while working in the Electricity Distribution Sector. Direct exposure to client at various levels. Gained competency in MS Excel. Learnt to work together in a team, with different people having different backgrounds.

Brief Description of working environment, expectations from the company: I was sent to Jaipur i.e. the client location immediately after the induction programme and my whole PS-II has been completed here itself. I worked in the client's office where we were allotted a room specifically for this work. The dress code was complete formals as we were the representatives of PwC and we should look like so. The team was really great and were easy to communicate with. The seniors were quite helpful and accommodating. The company expects you to work according to the deadlines set by them. You may have to frequently take the work back home and complete it and may even work on weekends, but the team parties take all that stress away. All in all a good environment to work in and great people to work with.

Academic courses relevant to the project: Electrical Sciences, Power Systems, Fundamentals of Finance and Accounting

Name: Partha Sarathi Pandit (2014A2PS0794P)

Student Write-up

Short Summary of work done during PS-II: Documentation of proposal, secondary research work for business development and for clients, project monitoring services for client which included development of MIS dashboard, organization restructuring, reports and presentation on the basis of secondary research work.

Tools used (Development tools - H/w, S/w): MS - Excel, PowerPoint, Word, Visio

Objectives of the project: Most of the projects were client deliverable in which status and update were required by the client and business development for the company

Outcomes of the project: The projects given to me directly reflected the standard of work of the company.

Major Learning Outcomes: Knowledge in proposals, good grip on MS - Excel, PowerPoint, word, visio

Brief Description of working environment, expectations from the company: The working environment was good. My team members were very supportive and helped at every stage possible.

Academic courses relevant to the project: Construction Planning and Technology

Name: Rohit Bansal (2014A2PS0751P)

Student Write-up

Short Summary of work done during PS-II: For my BD project of Tourism Notes, I got to know it seeks to harness the fullest potential of the states/countries for development of tourism. For repository part, I got to know that availability of collated information, on external and internal assistance can be utilized by the line ministries and various government agencies to track the support available and also help in channelizing the same to the target geographies and sectors. And finally I worked on the presentation on Tourism in Odisha and Urban sector schemes which tested my research skills and brought the best out of me.

Tools used (Development tools - H/w, S/w): MS Word, MS Excel, MS Power-point

Objectives of the project: Repository- To create a database for the official site of DEA. Tourism Notes- To get the present situation of the tourism for further developments, strategies and policies. Odisha Tourism- For the selection of PMU for the Odisha Tourism. Urban sector- To get Funding from DFID for various urban schemes

Outcomes of the project: Repository- Basic structure of database got ready. Tourism Notes- Is being used for internal purposes. Odisha Tourism- Presented before the Odisha tourism dept. Urban Sector- Ongoing

Major Learning Outcomes: Insight knowledge of domains like repository of projects, Tourism sector and its statistical analysis, urban sector & various ongoing schemes MS Word, MS Excel, MS Power-point

Brief Description of working environment, expectations from the company: It has been a wonderful experience in PwC as I got the opportunity to work in the sector of my interest. I am really thankful to the PSD division for giving me this amazing opportunity. The one thing I liked about PwC most is the amazing work culture here. People are willing to help you in any situation and they are ready to provide you the guidance anytime. Working on the projects here gave me the real time exposure and knowledge of domains like repository of projects, Tourism sector and its statistical analysis, urban sector & various ongoing schemes

Academic courses relevant to the project: Principles of Management

Name: Rohit Kumar (2014A2PS0735P)

Student Write-up

Short Summary of work done during PS-II: I was involved majorly in three projects. The major work was to have a thorough research about the projects.

Tools used (Development tools - H/w, S/w): Excel, Power point, Word

Objectives of the project: A brief overview of global ports and benchmark the operational efficiency of the projects. Having an overview about Indian Ports, study the historic of cargo handled, study the present capacity of the ports, outlook for cargo and initiative by government to increase the operational efficiency of the ports. Setting up an E-challan system in Punjab under PPP mode.

Outcomes of the project: Helped in making a benchmark report of overview on Indian Ports. Helped in making technical RFP and financial model for E-challan system. Helped in preparing RFP for ECTS and Sagarmala Development project.

Major Learning Outcomes: I came to understand various aspects of consulting, the methodology by which work is done and various approach to tackle real-life projects.

Brief Description of working environment, expectations from the company: The work environment was great, people here are very co-operative. The company provides immense learning experience.

Academic courses relevant to the project: Statistics, Basic Finance

Name: Sanskar Agrawal (2013B3A30577G)

Student Write-up

Short Summary of work done during PS-II: Independent review of Energy Audit for Financial Year-15-16. Along with another fellow PS student, I was allotted a project in the energy and utilities team in the GRID division of PwC. We were primarily based out of Jaipur and our client were the three electricity distribution companies (DISCOMs) of Rajasthan, namely Jaipur, Ajmer and Jodhpur Vidyut Vitran Nigams. The project involved calculating the Aggregate Technical and Commercial (AT&C) losses for each of the 532 electricity subdivisions which the three DISCOMs comprised of. For this purpose, we downloaded required client data in Jaipur, visited subdivisions in various places in Rajasthan, and used models developed in MS Excel to calculate the AT&C losses for each of the subdivisions.

Tools used (Development tools - H/w, S/w): MS Excel

Objectives of the project: To calculate AT&C losses for each of the 532 electricity subdivisions in Rajasthan.

Outcomes of the project: Calculated AT&C losses for subdivisions in Rajasthan

Major Learning Outcomes: Firsthand experience of the consulting industry

Brief Description of working environment, expectations from the company: Good working environment. Every intern is assigned a team based on his branch on Day 1. Team members are very helpful, and asking questions is encouraged. Company expects interns to follow PwCs culture of being proactive in their actions, and to take an active interest and ownership of their work. A bulk of the time was spent in downloading data from client servers in Jaipur and later compiling it, which was a mundane and repetitive task. Work also included visits to remote locations during the course of project. Nevertheless, I have gained proficiency in MS Excel and explored a possible career option thoroughly by working in a live project at such an early level.

Academic courses relevant to the project: Power Systems, Fundamentals of Finance and Accounting

Name: Vidya Sagar (2013B5A20791P)

Student Write-up

Short Summary of work done during PS-II: 1. Potential of Tourism Economic Zones in India. 2. Assessment and monitoring the Technical and Financial aspects of Detailed Project Report under the TIES scheme 3. Preparation of Proposal for Preparation of Concept Development Plans and Detailed Master Plans for Holistic Development of Package II Island

Tools used (Development tools - H/w, S/w): MS Office

Objectives of the project: 1. Identify the potential for Tourism if Tourism Economic Zones are developed in India. 2. Assessment and monitoring the Technical and Financial aspects of Detailed Project Report. 3. Creation of business development proposal.

Outcomes of the project: Got to know a lot about the tourism sectors in and around India and identified suitable locations for TEZs. Technical and Financial appraisal of DPR

Major Learning Outcomes: Got to know a lot about the tourism sectors in and around India and identified suitable locations for TEZs. Technical and Financial appraisal of DPR

Brief Description of working environment, expectations from the company: PwC is a good employer to begin your career in consulting. Immense opportunity to learn and very co-operative peers to help. Great opportunity to improve technical skills and make experience. Work environment is collaborating and stimulating. Very often there will be necessity to work until late or even over the weekends

PS-II Station: PricewaterhouseCoopers (PWC), Hyderabad

Student

Name: Avish Vora (2013B2A40816P)

Student Write-up

Short Summary of work done during PS-II: 1. Prepared a location site assessment paper/brochure which included introduction to Indian Economy and last 5 years FDI trends and then a Methodology was proposed which will help clients to get a general idea of how PwC undergoes assessment. 2. Identified electronic products and their HS code and did Trade and value addition analysis for these products for Electronic Sector Value Chain analysis of Andhra Pradesh 3. Did Consultation work for SIPC Kandla and NIMZ Zaheerabad projects.

Tools used (Development tools - H/w, S/w): MS Word, MS Excel, ITC- Trademap

Objectives of the project: 1. Prepare Introduction and Methodology for Location Site Assessment paper 2. Do stakeholder consultation for SIPC (Special Investment Port City) Kandla 3. Prepare Sector Analysis of the top 7 focus sectors identified 4. Trade analysis of the identified Electronic products for last 10 years. 5. To find Backward and Forward linkage of the identified categories. 6. Prepare Company Profile for 14 companies. 7. To find out Export- Import Countries and Products for India 8. Value addition analysis for exports of India in electronics

Outcomes of the project: 1.Completed Introduction and proposed a methodology for Location site Assessment 2. Made 7 sectoral analysis 3. 14 company Profile 4.For a sample of 600 electronic companies did Backward and Forward linkage. 5.Did trade analysis for identified 33 electronic products 6.Followed up with the 1500+ interested investors for SIPC Kandla 7.Organized data for more than 4500 companies based on HS and NIC(National Industrial Classification) code.

Major Learning Outcomes: 1.Report writing with the use of SCQA principle. 2.How to use Compound annual growth rate(CAGR) 3.Gathering data from International Trade Centre- Trade Map for trade analysis purposes 4.Indian Economy improvement in last 2 decades 5.Preparing of credentials list

Brief Description of working environment, expectations from the company: During my 6 months internship, colleagues at infra PwC Hyderabad have provided me with very warm and open atmosphere and were always ready to guide me if I come across any huddle.

Academic courses relevant to the project: Fundamental of Economic, Report writing

Name: Chaganti Kashyap (2013B1A40824H)

Student Write-up

Short Summary of work done during PS-II: 1) Working as a Consultant trainee at PwC India under the advisory LoS(Line of Services) in the sub unit of Power and Mining sectors of India.

2)Developed an 'Open Access Tool' for Power Sector for all states in India.3) Developed a solar tariff model for a Power Generating Company.4)Competitor analysis for competitive coal bidding.5)Part of International Competitive Bidding team. The tool helps in capturing all the key financials that take place when a consumer opts for Open Access.The tool helps the Power Consumer Client (Industrial, Commercial and Domestic), in choosing the best possible Technology(Wind/Solar/Thermal), The best possible Generator (The one who offers power for the lowest price), the total Open Access charges to be paid.The tool also helps the Power Generator client, to know the tariff to be charged for all kinds of consumers (Industrial, Commercial and Domestic).

Objectives of the project: To make a comprehensive tool which captures all financials when going through open access.

Outcomes of the project: Successfully made the tool.

Major Learning Outcomes: Strengthened my excel basics. Developed an understanding in the power sector.

Brief Description of working environment, expectations from the company: Good working environment. Friendly people. A training program based on teaching financial modelling.

Academic courses relevant to the project: Business Valuation and Financial Management

Name: Karan Desai (2014A3PS0828H)

Student Write-up

Short Summary of work done during PS-II: Market Research project on battery storage for integration of Renewable energy sources in the power grid

Tools used (Development tools - H/w, S/w): Excel, Word, PowerPoint, Q-GIS

Objectives of the project: Highlighting the need for grid scale storage systems in Tamil Nadu

Outcomes of the project: Support for bidding strategy

Major Learning Outcomes: Management consulting, financial modeling

Brief Description of working environment, expectations from the company: Fast paced environment, a lot to learn and front end management consulting opportunities

Academic courses relevant to the project: BAV

PS-II Station: PricewaterhouseCoopers (PWC), Hyderabad

Student

Name: Jai Srivastava (2014A2PS0454H)

Student Write-up

Short Summary of work done during PS-II: I am currently doing my PS2 at PwC, Mumbai. This is broadly a consultancy company, providing its services over a plethora of domains such as Infrastructure, Deals, Business Management, etc. Interns are allotted the Capital Project & Infrastructure Team, a further division of which is Transport & Logistics team, which I am a part of. Therefore, my work is focused on the logistics sector of a country. I have been a part of multiple projects, for India as well as Bangladesh,

and understood the sector deeply: Current status, importance in economy, contribution to GDP, Challenges, Opportunities, Trends, etc. My work has been understanding the changes in the Indian industry post the introduction of GST (Goods and Services Tax), while also being part of a 6 member team working to understand the freight forwarding market of Bangladesh currently. The projects sometimes go on for months, enabling us to dig deep and conduct analyses before providing advisory to the client at the end. This has been a major learning experience which has definitely deepened my thinking abilities, which also strengthening my professional skills such as Excel, Power Point, Report Writing, Data Collection and Analysis, along with the invaluable experience of working with the experts in this sector.

Tools used (Development tools - H/w, S/w): MS Excel, MS Powerpoint, MS Word,

Objectives of the project: Finding regulatory bodies in Bangladesh Freight Transport and the associated inefficiencies

Outcomes of the project: Flow-chart depicting all authorities in Bangladesh freight market, clearly highlighting the functions (policy making, regulation, policy enforcement) to understand the whole freight forwarding market. Also by analysis of the structure and various policies/acts, bringing out the various inefficiencies that weigh down the sector. Results to be part of the report to be submitted to the client.

Major Learning Outcomes: Structural thinking, Real-life complex problem solving, Doing effective secondary research, Proficiency in MS Office, Soft Skills Development (presentation, within team communication)

Brief Description of working environment, expectations from the company: PwC is a consultancy firm, therefore the working environment is quite lively with people conducting lots of client interactions on the phone. In addition to individual work, there is lots of team discussions and planning to develop a proper methodology and approach for the assignment at hand. The work is mostly developing a thought process for solving a problem, then using various tools of research to find data, then the data is analyzed and finally presented to the client in a PPT or report.

Name: Peddireddy Shashi Kiran Reddy (2014A2PS0548H)

Student Write-up

Short Summary of work done during PS-II: In the PS-II, I was assigned to the GRID division of PwC. The GRID division works on all the infrastructure projects of PwC. I was given a project on Transport Infra linked commercial development. The project deals with both Transit Oriented Development and Land Value Capture. As part of the project I have to detail upon TOD & LVC and the connection between them.

Tools used (Development tools - H/w, S/w): Microsoft Word, PowerPoint, Excel

Objectives of the project: To create a centralised document for Transport linked commercial development and help the firm save time in educating a professional.

Outcomes of the project: My work on Transit Infra linked Commercial Development at PwC aims to provide its professionals with readily available information on the topic instead of finding different sources and starting all over again which takes up huge amount of time which is a great resource in the professional consulting world. This project aims to save atleast upto 2 to 3 months per professional if they are working on any commercial infrastructure project.

Major Learning Outcomes: Working in PwC in the GRID division has helped me in gaining knowledge regarding the real estate and infrastructure sectors. It gave me a deep understanding of TOD & LVC and how infrastructure and finance go hand in hand. It also helped me in understanding how large firms like PwC undertake projects and work on them. My term at PwC was involved in working on Microsoft PowerPoint, Excel and Word. After working on two different projects my skill in the applications has been improved significantly. My stint with them also helped me in learning in certain soft skills like conducting ourselves in a corporate company, participating in group discussions and giving presentations confidently.

Brief Description of working environment, expectations from the company: PwC has a great work environment. Everyone is treated equally and cordially. The office hours are flexible and the environment in the office in general is good. The co-workers are always ready to help us in any way. Everyone is down to Earth. The various facilities within the office complex are great. The infrastructure provided by the firm is also great enabling us to work smart. We will also get a firsthand experience of life in a big corporate companies.

Name: Sneha Khaitan (2014A1PS0578H)

Student Write-up

Short Summary of work done during PS-II: Involved in an engagement advising a client operating in South Africa in the Chemical domain. The scope of the engagement entails review of their current gold mining process and to identify the different reagents used in the process. Study the market trends of the identified reagents and identifying local supply alternatives. Suggest practical and low-cost country sourcing opportunities to help achieve reduced sourcing cost.

Tools used (Development tools - H/w, S/w): EMIS, Factiva, Excel, PowerPoint

Objectives of the project: To research and analyse various oil and gas sectors

Outcomes of the project: An overall forecast of the Oil and Gas Industry and searching the scope of new entrants in the market

Major Learning Outcomes: Market Research on Automobiles and Overall Global and Indian Scenario of Oil and Gas Industry

Brief Description of working environment, expectations from the company: The work environment is very good and the company expects you to just have basic knowledge of power point and excel.

Academic courses relevant to the project: Business Analysis and Valuation

PS-II Station: S.R. BATLIBOI & CO. LLP, Gurgaon

Faculty

Name: Ashish Narang

Comments: Expectations from industry: S.R.Batliboi Co. & LLP is an Indian firm of Ernst & Young which is one of the largest professional services firms in the world and one of the "Big Four" accountancy firms, along with Deloitte, KPMG and PricewaterhouseCoopers (PwC). Student has been exposed to data analytics work. Organization look forward to have interns who have strong analytical skills.

Student

Name: Kunal Bansal (2013B4A20790P)

Student Write-up

Short Summary of work done during PS-II: SR BATLIBOI, is an indian entity for EY, which performs statutory audits in India on behalf of Ernst & Young. I was part of the data analytics team at EY. I performed Journal Entry testing and various other custom analytics, based on the requirements of the client. I performed various analytical procedures in order to detect fraudulent transactions in the balance sheets and transactional data of a specific firm.

Tools used (Development tools - H/w, S/w): ACL, Spotfire, Tableau, MS Excel

Objectives of the project: I undertook a project on application of Benford's Law in the advance analysis of various payment and revenue data

Outcomes of the project: We were able to define a methodology and designed a procedure through which we can ensure that the firm is not having any fraudulent transactions, if it satisfies the Benford Law curve.

Major Learning Outcomes: I learned various data management languages, Advanced data visualization softwares and techniques, applications of Benfords Law.

Brief Description of working environment, expectations from the company: Working atmosphere here at SR BATLIBOI, is really good. You will never be over burdened with work. You have a great data analytics team, where everyone is quite helpful and cooperative. Managers of the team are quite calm and will make you work efficiently and effectively, but not disturbing your work-life balance.

Academic courses relevant to the project: Object oriented programming, machine learning, database management.



PS-II Station: S.R. BATLIBOI & CO. LLP, Mumbai

Student

Name: Harsh Nijhawan (2014A8PS0399P)

Student Write-up

Short Summary of work done during PS-II: We worked on business intelligence tools to analyze the financials of the clients.

Tools used (Development tools - H/w, S/w): Tableau, SQL

Objectives of the project: To validate the financials & to see the trend.

Outcomes of the project: Learnt tools like Tableau & SQL

Major Learning Outcomes: Tableau, Excel , Auditing, SQL

Brief Description of working environment, expectations from the company: Working environment is not very good. They expect interns to work more than employees.

Academic courses relevant to the project: Fundamentals of Fin & Accounting.

PS-II Station: S.R. BATLIBOI & CO. LLP, Bangalore

Student

Name: Kamal Kumar Joshi (2014A8PS0438P)

Student Write-up

Short Summary of work done during PS-II: The most of my work was related to business development i.e. automating the internal processes. The technologies that I was using over there were not so fancy, but the resultant outcome had a significant impact on the organization. If someone who is really

interested in Analytics, then the tools that you are going to use here will play a significant role in your career.

Tools used (Development tools - H/w, S/w): R programming, Tableau, SQL, VBA

Objectives of the project: Automating the Internal Processes.

Outcomes of the project: All the projects collectively saving more than 5000 man hours of work which can have a huge impact on the budget of the company

Major Learning Outcomes: Learnt Data Analytics Skills- The major part of Data Analytics, which is also the most time consuming, is Data Cleaning. I have learnt a lot of new techniques to clean the data. The projects also helped me in learning the things which are not taught in college, but in industry they are very useful in day to day operations. The most important thing that I have learned is keeping track and document the work that you do. This might sound a small task, but if you are in corporate job where you will be working simultaneously on 4-5 projects, then these small things can make your life a lot easier. Also if you are working on a project, which is similar to the one that you have worked previously, then you will get an edge over others if you have well documented your previous work.

Brief Description of working environment, expectations from the company: First of all, I would like to say that SR Batliboi is a member firm of Ernst & Young LLP. So basically, if you are working in SR Batliboi, that means you are working with EY. This is a global firm which is pioneer in Audit and Consulting. The work culture is good, although you might have some periods where have to work for extreme long hours. But it is a good place to start your career with and the main focus while you are working over there, is that you should not compromise with the ethics. Overall it provides you a good exposure to corporate world.

Academic courses relevant to the project: Fundamental of Accounting and Finance, Data Mining.

PS-II Station: Sattva Media & Consulting Pvt Ltd, Bangalore

Student

Name: Hardik (2014A1PS0674G)

Student Write-up

Short Summary of work done during PS-II: helped them write 4 reports and a white paper by doing secondary researches and some data analysis

Tools used (Development tools - H/w, S/w): Excel, Word, Tableau, R Studio, etc

Objectives of the project: To see the trends and challenges in different sectors by rural population.

Outcomes of the project: Generate Public awareness and awareness among funders and clients

Major Learning Outcomes: Digitisation leading to a smarter world and issues faced by rural and bottom of the pyramid population

Brief Description of working environment, expectations from the company: Working culture and environment is great people are very helpful and understands what a student needs to learn and how to engage interns in their mainstream projects

Name: Nikhil Garg (2014A2PS0527P)

Student Write-up

Short Summary of work done during PS-II: I worked on a number of big projects and several small projects in Sattva. The first project was Practical Action based in Bangladesh which is related to Sandbar Cropping. I did extensive secondary research and after that prepared business models which were prepared for the self sustainability of the farmers engaged in Sandbar Cropping. Similar I worked for Reel Gardening project in African countries and again did research work about various foundations engaged and NGOs. Apart from that I worked for Axis Bank foundation project, YES foundation, Titan Impact Awards in which I designed questionnaires for data collection, checked progress report of various interns working in different NGOs and sent mails to organisations for Titan Awards. Later on I started working on Digital Financial Inclusion in which I did research and data analysis on various types of data of NABARD and Census. I transcribed a lot of telephone interviews and derived conclusions based on opinions of various industry leaders and experts and did a lot of secondary research on various digital financial inclusion components. Later I had to contribute in writing the white paper for the CII on the impact of digitization on tourism, Logistics, Information and technology etc. in India in which secondary research work was involved.

Tools used (Development tools - H/w, S/w): MS-Excel, MS Word, Social Cops,

Objectives of the project: To understand the impacts of Digital Financial Inclusion and how to implement Digital Financial Inclusion in whole India. To make the farmers of Sandbar Cropping Self Sustainable in Bangladesh

Outcomes of the project: The business models for the successful self sustainability of the Sandbar Cropping farmer was prepared based on research and data analysis. The Digital Financial Inclusion going in whole country was understood and the data was analysed for the publication of the report.

Major Learning Outcomes: Learnt about the above mentioned projects and how the research and analysis are done in the social sector companies and the impact of these projects in the respective sectors.

Brief Description of working environment, expectations from the company: The work which we did mostly was secondary research which helped us gaining a lot of information on various sectors but at the same time it was a bit monotonous sometimes as we did not get to learn any new software or things. Our involvement was well taken care of and we were pushed to do good work. They should give more and more exposure to different projects going on in the company. The secondary research at times was a bit disorganized because of the huge amount, but it helped us gaining a lot of insights in the sectors. The company should give a little bit more difficult tasks which help the interns learning new skills so that they can use it at other companies as well.

Academic courses relevant to the project: Not really but good knowledge of Data Analysis is recommended

PS-II Station: Star TV, Mumbai

Student

Name: Lakshya Ghuliani (2013B4A70602G)

Student Write-up

Short Summary of work done during PS-II: First project was building a content based recommendation system for movies; recommending movies to a user based on his watch history capturing his interest.

Second project was building interest based targeting system; figuring out what a user might be interested in based on data.

Third project was on automating the work done by customer support team; built a classifier for closing junk queries and then a multiclass classifier for redirecting request to the concerned team

Tools used (Development tools - H/w, S/w): Python (ML Libraries) , AWS (EC2), Terraform ,NewRelic

Objectives of the project: Experimenting with content based recommendations for movies; building interest based targeting system; automating customer support.

Outcomes of the project: Interest based targeting and Customer Support work have been deployed into production

Major Learning Outcomes: Machine Learning topics, python, server hosting

Details of papers/patents : A short paper is being written on the work done in interest based targeting

Brief Description of working environment, expectations from the company: Work environment is very chill; core working is only 7 hours a day. There's a daily meeting with the team updating each other on the work done and is monitored on a dashboard. The company gave us time to learn basics of machine learning and python and then I got the projects. The team was very supportive and helped a lot throughout all the projects

Academic courses relevant to the project: Machine Learning, Information Retrieval

Name: Devansh Patel (2014A7PS0069P)

Student Write-up

Short Summary of work done during PS-II: Content Based Recommendation Model (ML)

-- Campaign Manager AD Dashboard (Web Development)

-- Mixpanel Custom Report Dashboard (Web Development) (9-10 such custom reports)

-- Setting up Confluent Control Center

-- Documenting Knol and Mixpanel for new

Tools used (Development tools - H/w, S/w): Amazon Web Services, GitLab, Anaconda, Sublime Text, Mixpanel, Sprint Boot

Objectives of the project: Objective was to learn new things and develop stuff which was urgently needed in Hotstar.

Outcomes of the project: Learnt a lot of new things such as Web Development, Python and most important of all Apache Kafka and it's greatness

Major Learning Outcomes: From Amateur to Expertise in Web Development, Deeper Knowledge of ML model actually works in IT industry, From Amateur to Semi-Pro in Apache Kafka

Brief Description of working environment, expectations from the company: Working environment is great. Company expects a lot from you because of our college name but they are very helpful when we are stuck at some part of the project and always there to help you. Daily Standup and 2weeks(Sprint) Planning before hand and engineering demos after Sprint ends regarding what did ur team achieve this Sprint.

Academic courses relevant to the project: Machine Learning, Information Retrieval, Artificial Intelligence, Object Oriented Programming, Database Management System

PS-II Station: TESCO Hindustan Service Centre, Bangalore

Student

Name: Yashitha Jaiswal (2013B2A40825P)

Student Write-up

Short Summary of work done during PS-II: Automation of Reports and reduction of manhours + headcount-on Tableau

Tools used (Development tools - H/w, S/w): Tableau, Fastload Teradata,

Objectives of the project: Automation on Tableau

Outcomes of the project: Automation on Tableau

Major Learning Outcomes: Automation on Tableau

Brief Description of working environment, expectations from the company: Great environment

Academic courses relevant to the project: machine learning

Name: DAULAT DAGA (2013B2AB0429P)

Student Write-up

Short Summary of work done during PS-II: Automation and rationalization of reports

Tools used (Development tools - H/w, S/w): SQL server, teradata, alteryx

Objectives of the project: Automation and rationalization of trade reports

Outcomes of the project: Reduced reporting time significantly

Major Learning Outcomes: Approach to problems

Brief Description of working environment, expectations from the company: Working environment is good, employees are helpful and reachable

Academic courses relevant to the project: machine learning

*PS-II Station: TimeInc.(Time Analytic & Shared Services Private Limited) ,
Bangalore*

Student

Name: Kaustav Saha (2013A7PS0180P)

Student Write-up

Short Summary of work done during PS-II: I worked with the Digital Analytics team in the Research & Analytics division of the organization. My work consisted of preparing monthly report on various aspects of Digital Analytics, developing dashboard on Mode Analytics (a Business Intelligence tool) and assisting the overall Data Analysis process by creating automation tools (VBA based .xlsm files or JAVA based APIs) to speed up periodic reports that follow an unique trend.

Tools used (Development tools - H/w, S/w): VBA (Excel, PowerPoint), MySQL, Google BigQuery, Google Analytics, Mode Analytics, JAVA

Objectives of the project: Assist the organization in various processes involving Digital Analytics

Outcomes of the project: Learned the usage of new tools such as Mode Analytics, VBA, etc.

Major Learning Outcomes: Exposure to the world of Data Analytics in general, and, to be specific, analysis on the world of digital media

Brief Description of working environment, expectations from the company: A very enthusiastic and friendly working environment. Everyone is eager, not only to learn but also to impart their own knowledge to their co-workers. The projects handled have been a huge learning experience and have greatly developed my skill sets.

Academic courses relevant to the project: Database Management Systems, Object Oriented Programming, Data Structures and Algorithms.

PS-II Station: Viacom18 Media Pvt. Ltd. , Mumbai

Student

Name: ARJUN VARANASI (2014A3PS0251G)

Student Write-up

Short Summary of work done during PS-II: I was the program manager for our start-up engagement program Vstep. I evaluated various corporate accelerators in the start-up ecosystem and the relevance of the start-up ecosystem to the media industry to model our own program.

Tools used (Development tools - H/w, S/w): Excel, PPT, Word

Objectives of the project: To launch a successful startup engagement program at V18

Outcomes of the project: Successfully launched Vstep with over 200 applicants in various categories and 13 shortlist for the final demo day.

Major Learning Outcomes: Presentation skills, Stakeholder management, Primary and secondary research, Market study and sizing

Brief Description of working environment, expectations from the company: The working environment and culture are very welcoming. I have learnt a great deal from my manager. Work is always appreciated and recognised, even by the Senior management of the organization.

Name: Shriya Srivastava (2014A3PS0314G)

Student Write-up

Short Summary of work done during PS-II: Worked in corporate strategy and data sciences. Tested and worked on internal circulation weekly rating and viewership data dashboard. Extracted year long historical data of the 10 genres Viacom18 operates in. Predicted FY18 spends of major advertisers. Weekly updated the same. Worked on studying the impact analysis of recommended break patterns on Kannada and Hindi shows by calculating viewership drops and ad grps of the shows which were doing a pilot run. Both projects are on going.

Tools used (Development tools - H/w, S/w): Excel, BARC, Mafras Audience report generator.

Objectives of the project: Excel, BARC, Mafras Audience report generator.

Outcomes of the project: Dashboards up and running. Break pattern analysis ongoing and showing positive results.

Major Learning Outcomes: In depth understating of how media industry works and factors that impact shows/ movies. Learning of how to make sense out of large amounts of data and development of an analytical outlook towards problems

Brief Description of working environment, expectations from the company: Interactive, encouraging and creative environment.

Name: Akshita Mittal (2014A8PS0461G)

Student Write-up

Short Summary of work done during PS-II: Business strategies for the future of VOOT, the video on demand platform of viacom18.

Tools used (Development tools - H/w, S/w): Excel, PowerPoint

Objectives of the project: To keep ahead of the competition

Outcomes of the project: Pros and cons of the product by studying audience sentiment

Major Learning Outcomes: Exposure in terms of client meetings

Brief Description of working environment, expectations from the company: Very casual and friendly environment.

Name: Sanjay Ghosh (2013B1A70813P)

Student Write-up

Short Summary of work done during PS-II: Generating ideas for original Branded Content shows followed by lucidly writing them out and making presentations which maximise ease of pitch to clients resulting in higher conversion rate.

Tools used (Development tools - H/w, S/w): Ppt, photoshop, premier pro.

Objectives of the project: To increase branded content conversion ratio at Voot which was very low.

Outcomes of the project: Several projects, and also 1-2 multi crore projects have cleared first stage pitches for several major brands and some have even reached advanced stages of negotiation with considerable pre production already began.

Major Learning Outcomes: How to come up with new ideas for fiction or nonfiction shows in various formats and present them in an interesting way to not only the relevant brand but also the viewers on our platform.

Brief Description of working environment, expectations from the company: Very talented people to work with and learn from. No proper place to sit for interns and long hours but since I was given the kind of work I always wanted to do all this did not matter and I enjoyed it throughly.

Academic courses relevant to the project: Creative Thinking, Musicology

PS-II Station: Vymo, Bangalore

Student

Name: Kinjal Motwani (2014A3PS0151G)

Student Write-up

Short Summary of work done during PS-II: Prospect and Partner profiling. Lead generation and market research.

Tools used (Development tools - H/w, S/w): Salesforce

Objectives of the project: Revenue increase from getting partners on board

Outcomes of the project: Final negotiation stages with 3 partner firms

Major Learning Outcomes: Started taking sales executive calls

Brief Description of working environment, expectations from the company: I would like to continue working here although a different profile.

Academic courses relevant to the project: NVC

PS-II Station: Zinnov Management Consulting Pvt. Ltd., Bangalore

Student

Name: amit kumar (2014A2PS0540P)

Student Write-up

Short Summary of work done during PS-II: Core consultancy work involving secondary and primary research to derive insights that can help assess client company's current scenario and using these insights to execute decisions that are client-friendly and profits to both firms

Tools used (Development tools - H/w, S/w): No development work done

Objectives of the project: Consulting Fortune 500 companies in achieving their product engineering goals

Outcomes of the project: Vary project to project

Major Learning Outcomes: None can be mentioned

Brief Description of working environment, expectations from the company: Great work culture, there are tons of learning opportunity if you dig into right place

Name: Prabal Sharma (2014A1PS0356H)

Student Write-up

Short Summary of work done during PS-II: My work mostly included python and on various databases. I also worked on python frameworks Django and Flask. Developed a Twitter model for personality analysis of key executives using their Twitter profile.

Tools used (Development tools - H/w, S/w): MongoDB, Spark, MySQL, Django, Flask, Python.

Objectives of the project: To score executives based on their interests using social media data. Automating validations for the data present.

Outcomes of the project: Scored and ranked executives based on their interests. Developed an ETL service for news data present. Automated validations for various database systems.

Major Learning Outcomes: Learned Python, Mysql, MongoDB, Spark, Django, Flask, MS Excel.

Brief Description of working environment, expectations from the company: Working environment was really good. The team helped me with any issue i encountered. But there was no pre-planned projects for the interns. This helped me in having a lot of exposure but i hope company will have more structured projects for interns to come.

Academic courses relevant to the project: DSA, DBMS.

Name: Nanduri Sai Sindhuja (2013B1A40874H)

Student Write-up

Short Summary of work done during PS-II: Market analysis, creating better presentations according to client requirements, Introduction to search engines like LinkedIn, Naukri, Google etc.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft Powerpoint

Objectives of the project: Client is looking to acquire companies in different verticals like DevOps, Automotive, Internet of Things(IoT), Analytics, Security, Technology Service Providers(TSP) etc. Zinnov will provide them with the knowledge database of leading companies in these fields and provide a deep-dive into the top 10-12 companies to provide a holistic overview of the companies to client which will help them decide on a specific acquisition.

Outcomes of the project: We provided the client with a holistic representation of the companies in the automotive industry. We shipped the deliverable to the client and are waiting for their feedback.

Major Learning Outcomes: 1. Advanced Excel is a very useful skill in consulting because whatever market research is done, the data is saved in the form of an Excel sheet. This data is collected depending on how deep the company must be analyzed.

2. Presenting data is a very important skill as clients don't want to listen huge numbers during a pitch. They want the information to be crisp and to the point. Seeing a slide with various graphs, logos and the insights we derived from the data is useful during client meetings.

3. Market sizing is important when you are expecting a disruptor in the market. For example, Internet of Things is a disruptor in the current market. To estimate how much of the market share IoT will have, we need to first size the entire market of the already existing IoT market. There are two approaches to this: Top-down and Bottom-up. In the Top-down approach, we take some companies and calculate their R&D spend and their market share. Then we calculate the revenue based on this percentage for different industry. This is usually done for industrial reports which require a mere number. In the Bottom-up approach, we take the actual numbers (R&D spend) of different companies from their annual reports and then estimate how much percentage of that is going to different verticals.

4. There are projects like M&A (Mergers and Acquisitions), Private Equity and Vertical addition projects for which clients will extend their requirements for different industry. For example, a client

wishes to acquire a company in the Automotive industry. The client would want to acquire a company whose employees are less than 100 or 200, revenue less than 10 million dollars and would prefer a company which has some assets or some intellectual property which it could leverage. So, we analyze the industry and make a list of 10-20 companies. We then present the client a deep-dive of each company and then provide a rating of the top 10 companies so that the client can decide about which company to be acquire. These are some things which I learnt during my PS-II. I also learnt how to behave in an office, when to put forward your opinion and when not to and to adhere to deadlines. I hope this experience will help me in the long run and help me grow wherever I am.

Brief Description of working environment, expectations from the company: Zinnov is a private management consulting company. It was established in 2001 with headquarters in Bangalore and other offices in Gurgaon, Texas and California. They offer variety of services in the field of management consulting. They work with different clients, some of who include the world™s largest consumer electronics company and the leading producer of cars and commercial vehicles. Working at Zinnov means facing a new challenge every single day. It is difficult but also very interesting. The work culture of Zinnov is purely professional kindled with interpersonal nurturing and connected growth. The kind of projects we take up on an everyday basis are mainly in the field of strategy which need at most attention to detail and careful segregation.

Name: Pranav Anand (2014A2PS0714P)

Student Write-up

Short Summary of work done during PS-II: Business consultancy for GIC setup and start-up accelerator.
Study of Blockchain technology- a disruptive technology

Tools used (Development tools - H/w, S/w): Word, Excel, Powerpoint

Objectives of the project: Setting up a Shared services centre

Outcomes of the project: Client was extremely pleased with the location analysis across the Europe

Major Learning Outcomes: Client Interaction, Presentation skills, In-Depth knowledge of Startup Ecosystem, Learned various usecases of Blockchain applications

Brief Description of working environment, expectations from the company: Work environment is great. People were very helpful and supportive.

Domain: Electrical Electronics

PS-II Station: Analog Devices - Design and Simulation, Bangalore

Student

Name: Shubham Chawla (2014A8PS0394P)

Student Write-up

Short Summary of work done during PS-II: The work given was largely in Analog IC design. Although only 2-3 people out of 8 got core analog design work. I was in Power management team which does LDOs and Bandgap References etc. The team members are friendly to approach and it is necessary to be in constant touch with them to learn how to do the tasks which are given by the manager. Being comfortable with tools took me 20 days to 1 month. After that the project required strong CMOS design fundamentals like op-amp design, Bandgaps, VCO's. Also, I learned the whole flow of how the chip is made and tapeout happens. Optimizing other people's design is also a crucial task which was given to me. Also, Having a look at other people's design made me know a lot of techniques on how designs are made in the industry. There was a lot of learning at ADI!!!

Tools used (Development tools - H/w, S/w): Adsim/Xadice/R10/F10 (in-house tools), Virtuoso

Objectives of the project: Design of Power management blocks for ADA4574

Outcomes of the project: The chip is to release in December 2017. The power management blocks is necessary to have the required specifications that were given to me so that customers buy the chip. Being comfortable with design tools and be able to participate in a successful tapeout would be the major outcome.

Major Learning Outcomes: Circuit Design techniques for Low power and High Speed applications

Brief Description of working environment, expectations from the company: The work is allotted based on resume shortlisting. Work given highly depends on team. The company people are friendly to approach and discuss problems. The projects given are interesting and quite challenging.

Academic courses relevant to the project: Microelectronic circuits, ADVD

PS-II Station: ARM Embedded Technologies Private Limited, Bangalore

Faculty

Name: Rekha A.

Comments: Expectations from industry: The advantage of practice school is making students comprehend the industry and its needs even before going to a job and build their career. It helps in enhancing their skills by working on a live project but also prove advantageous to the organization by their innovative nature. The Students come from various discipline and work in various fields. The students worked on various projects on image processing, embedded systems, physical design, communication, tracking of objects in motion, quality and reliability tests for the products, design of thermal management systems, verification and Validation etc. Interaction with the mentors helped in identifying the skill gap courses and set of basic courses need to work on the projects and the same was communicated to the students to refresh such courses before they join for internship. This helped the students to quickly ramp up with the work and start contributing towards the project. Also shared some of the e-books for system verilog, video basic books. PS II was truly enriching for the students as they got an insight into the latest tools technologies being used in the industry by working on the live projects.

Student

Name: Akshay Ginodia (2014A8PS0474G)

Student Write-up

Short Summary of work done during PS-II: Learned about Physical Design and STA and implemented it on the latest core and latest technology. Implemented various new trials for the core on both the EDA tools, viz., Cadence and Synopsys.

Tools used (Development tools - H/w, S/w): Cadence - Genus, Innovus, Synopsys - DC, ICC2

Objectives of the project: To achieve a better power, performance and area by implementing new trials

Outcomes of the project: A better performance achieved for a few of the trials and some issues identified

Major Learning Outcomes: Physical Design, Static Timing Analysis, Script writing in tcl, EDA softwares like Cadence and Synopsys

Brief Description of working environment, expectations from the company: The working environment of the company is quite good. The employees from my team at ARM (POP Team) were quite helpful and approachable. The office vibe is calm and work was carried out quite smoothly.

Name: Vima Gupta (2014A3PS0246P)

Student Write-up

Short Summary of work done during PS-II: I worked on designing custom clock tree structures and deployment of the same across various cores. The work was mainly implementation related. Methods to create and evaluate customer clock tree structures were developed. It involved fair amount of scripting. After a month or so, I was able to give my own inputs based on theory too. Overall it was a good learning experience.

Tools used (Development tools - H/w, S/w): Cadence tool : Innovus, Spectre. Synopsis tool : ICC 2

Objectives of the project: Deployment of custom clock tree structures across various cores and their PPA quantification

Outcomes of the project: Successfully deployed the flow for building clock spine as well as QoR analysis

Major Learning Outcomes: Good theoretical background is helpful in evaluating custom flows.

Brief Description of working environment, expectations from the company: They expected me to deploy the flow for both tools. But I was only able to deploy it on one tool, partly due to lack of tool support. It is a very relaxed and friendly atmosphere. Hard work and communication/effort are sincerely appreciated.

Academic courses relevant to the project: Analog and digital VLSI

Name: Manish Agrawal (2014A8PS0471P)

Student Write-up

Short Summary of work done during PS-II: My work was on DynamiQ implementation of octa core processor optimization. During my internship I learned a great deal about how the Corporate industry works, market requirements and employees perspective towards their work. Overall it was a great learning exposure and an opportunity to broaden our knowledge be it career related or life related. I Enjoyed my internship a lot and also it gave me a clearer picture of what I should look for in a job apart from the CTC.

Tools used (Development tools - H/w, S/w): Cadence (genus , tempus and innovus)

Objectives of the project: Optimization of DynamiQ octa core processor

Outcomes of the project: Optimized their current design by 33%

Major Learning Outcomes: Learned working on Cadence tool and physical design concepts

Brief Description of working environment, expectations from the company: Company had Quite decent expectations to start with that is you should try to communicate with as many teammates as possible, should have a decent technical knowledge.

Academic courses relevant to the project: ADVD, microelectronics.

Name: Leah Rachel Chacko (2014A8PS0410G)

Student Write-up

Short Summary of work done during PS-II: Library benchmarking and PPA headlines : Ran full implementation flows on multiple cores,while varying different parameters. Collected data from these runs and created a benchmark which can be used by a customer to select the most appropriate combination of parameters for a particular scenario. Also wrote perl scripts to automate this process. Created a generic flow which depends on inputs from a single file, which significantly reduces the time taken to setup and run a flow.

Tools used (Development tools - H/w, S/w): Software tools (EDA tools)

Objectives of the project: To benchmark libraries on different classes of cores and create a data sheet for the purpose of selecting the most appropriate parameters. Also to automate this process and make a generic flow to ease the process of benchmarking.

Outcomes of the project: Runs were completed on all classes of cores and data was collected and graphed. A generic flow was made and scripts were written to automate the implementation flow.

Major Learning Outcomes: Learnt how to use EDA tools to convert verilog code into a design that can be fabricated. Understood how different parameters affect the performance of designs, and how to correctly combine parameters to maximize performance. Also learnt sed and perl, and how to generalize and automate implementation flow.

Brief Description of working environment, expectations from the company: Good work environment, helpful team. One is expected to complete work, and communicate well with the team.

Name: Arvind KR (2014A3PS0299P)

Student Write-up

Short Summary of work done during PS-II: I interned at the physical design team at ARM. The work involves carrying out RTL synthesis followed by the entire ASIC design flow from placement to postroute. It involves using Cadence (Genus, Innovus) & Synopsys (DC, ICC2) tools to carry out the flow. My project involved analysing synthesis in different ARM cores(High performance & low power cores) and different EDA tools(Cadence & Synopsys). Further analysis of timing QoR, standard cell profiling, custom cell prototyping, physically aware synthesis techniques etc was carried out. Finally, the set of experimental conclusions for synthesis was submitted to the physical design team for deployment.

Tools used (Development tools - H/w, S/w): Cadence Genus, Innovus & Synopsys DC, ICC2

Objectives of the project: Analysis of RTL synthesis from EDA tools, cores & standard cell library perspective

Outcomes of the project: The resulting and conclusions from the project was recommended to the entire physical design team for deployment in the synthesis flow.

Major Learning Outcomes: Understanding of ASIC design flow, working knowledge of EDA tools

Brief Description of working environment, expectations from the company: Work environment & culture is good. All the employees are friendly & approachable to get doubts cleared. Learning curve is steep. Unlike some of the other PS2 stations, interns are treated as good as permanent employees by the team members. The project allotted is also taken seriously by everybody including the manager and we are expected to work hard towards its completion. The work pressure is comparatively manageable. My expectations from the company were mostly met positively.

Academic courses relevant to the project: ADVD (to a very moderate extent), Doing an ASIC design flow course would be beneficial.

Name: Krishna Dhoot (2014A3PS0312H)

Student Write-up

Short Summary of work done during PS-II: Multiple verilog models for a given standard cell were unified and support was added for run-time BIAS pin name change. The script written by previous intern for generating unified Verilog model was re-evaluated and modified to add flexibility with respect to BIAS pin name and to cope with certain corner cases. A prototype for adding BIAS pin name from CDL for Verilog Generation was created. The verification environment to run function simulation, LEC and Low power checks was restructured.

Tools used (Development tools - H/w, S/w): Cadence incisive, Synopsys VCS, Mentor Questasim, Cadence Conformal, Synopsys Formality, Tessent Fastscan, Tetramax ATPG, Synopsys ESP-CV

Objectives of the project: Unify Verilog source and support run-time BIAS pin name change to reduce overall development effort and reduce maintainance time

Outcomes of the project: This project will reduce the modelling effort in the future for cells with different bias pin names. It will also reduce the redundancies, maintenance effort and development time for Verilog models.

Major Learning Outcomes: I got acquainted with the overall ASIC design and verification flow using standard cell methodology. I learned to script efficiently during the project. I got familiarized with a bunch of validation tools used in VLSI industry. I understood the corporate culture and the expectations from a fresher engineer in the industry.

Brief Description of working environment, expectations from the company: The culture at ARM is that of working as a team player rather than working on your own. People are helpful if you are stuck at some technical issue. But, a basic knowledge of your branch and some basic coding skills are expected. The ability to understand things clearly is appreciated.

Academic courses relevant to the project: Digital Design, C programming

Name: Abhilash Chivukula (2014AAPS0252H)

Student Write-up

Short Summary of work done during PS-II: The main aim of the project assigned to me was to develop regression tests for various softwares developed by ARM. I developed regression tests for four such softwares. I also worked on a couple of side projects which involved java coding. My work here mainly involved working on shell scripting, Linux and java development on an Eclipse platform.

Tools used (Development tools - H/w, S/w): Shell scripting, Java coding, JDBC concepts, Apache POI interface

Objectives of the project: To develop regression tests for various softwares

Outcomes of the project: I was able to develop four regression tests which were added to the software repository of the company. I was also able to address a couple of Bugzilla(Bug logging software) tickets which asked for enhancements to added to a particular software.

Major Learning Outcomes: The projects I worked on helped me better my technical skills. Some of the technologies worked on and skills acquired include working on a Linux platform, shell scripting, java coding and familiarity with the Eclipse platform, project development and use of Subversion software. Apart for that, working in a company like ARM gives a fair idea of what to expect from a corporate work place.

Brief Description of working environment, expectations from the company: The work environment here was amazing. My mentors and manager were very supportive of me. I was given enough time to learn and deliver the task assigned. The work culture is not hectic as the deadlines are quite reasonable. The company is doing a great job with the internship process as most interns are given work on real time

projects which are important to the company. Finally, ARM is a great place to work and I would recommend it to anyone interested in subjects like computer architecture, VLSI design, software development and working with EDA tools like Cadence and Synopsys.

Academic courses relevant to the project: Object Oriented programming course could have been helpful. I can't say for sure as I have not done the course. But enough time is given to understand the technologies or the concepts that might pertain to your work here. A basic knowledge of the Linux system and shell scripting can be quite useful.

Name: Shrey Jain (2014A3PS0186P)

Student Write-up

Short Summary of work done during PS-II: Interacting with the implementation team to figure out modules they have found critical while implementing their designs. Creating a script to make it report the paths from the above mentioned module. Comparing the cells in these critical paths and the cells available to us in the newest technologies and flagging the cells which are not yet available. Pruning the highly complex logic cells (if any) from these critical paths and finding a simpler alternative for their representation. Decide which stage is focused upon for finding the criticality in paths, as critical paths change with each stage in the flow. Wire RC scaling factor estimation from 16FF to 7FF. Figuring out the current spice options used by the FOM to simulate their decks.

Tools used (Development tools - H/w, S/w): PrimeTime, Tcl, Perl

Objectives of the project: Research, Improvement in the productivity and efficiency of the product & services

Outcomes of the project: Marketing to help Customers identify devices to productize. Standard Cell Architecture Development. Early Evaluation of Process Technologies. Compare between Process Technologies/Foundries

Major Learning Outcomes: Energy/Performance Comparison of VT and CL within a process technology. Quantify Performance vs. Power Tradeoffs. Quick estimate for projecting relative energy/performance between processes.

Brief Description of working environment, expectations from the company: The working environment was really good. The employees are very friendly and cooperative. Regular sessions take place for the interns. The only catch is that you don't get to have a say in the topic of your project. They allot projects based on their requirement and not your bio data.

Academic courses relevant to the project: ADVD

*PS-II Station: Cadence Design Systems India Pvt Ltd. - CAD Software,
Pune*

Student

Name: Mohit Sharma (2014A8PS0777G)

Student Write-up

Short Summary of work done during PS-II: The first objective was to develop a Perl Script that will extract some specific field from two different files one is acœtpmon. logae file and another is acœiss. traceae file which are generated when we give specific commands to run diags(basically Testbench).The objective of the next task is to convert Debug Module sequences from VMM to UVM. The current sequences have been developed based on VMM in the Foxhill update of Xtensa Processor. Some of the sequences are already converted and with the help of those I should convert all the sequences in UVM starting from Debug module.

Tools used (Development tools - H/w, S/w): Xtensa Explorer

Objectives of the project: Developing a Script and changes in the Testbench

Outcomes of the project: Successfully completed the changes required to be done

Major Learning Outcomes: UVM,Perl Scripting,System Verilog

Brief Description of working environment, expectations from the company: The company environment is good and people here are really helpful.Good learning experience.

Academic courses relevant to the project: Digital Design,MUP

PS-II Station: Cadence Design Systems India Pvt Ltd. - Processor Design, Pune

Student

Name: Ankit Singh (2013B2A30847G)

Student Write-up

Short Summary of work done during PS-II: There are various teams ranging from product validation(java),ID ,vision to Audio DSP. Since i was in audio i did work in post processing,pre processing developing kernals for HiPi 4 DSP for neural networks. I did API integration for mixer, DRC,Audio Equalizer (or wrote testbench for all), found all ferret warnings and did regression analysis for all.Made one handy tool for reading the header of wave file like sample rate, bits/sample etc.I worked on developing kernals for HiFi 4 for speech recognition using deep neural network (DNN)like wavenet ,LSTM etc(main reading and understanding stuff was done by my colleague) . I optimized a snippet(16*16 bit matrix multiplication) for HiFi 4 DSP.

Tools used (Development tools - H/w, S/w): Cadence Xtensa xplorer, code block ,audacity, C(pointers in depth) scripting language like python or shell .

Objectives of the project: To have in depth knowledge of C and to learn about HiFi DSP instruction set

Outcomes of the project: To have 3 modules for post processing ready for testing and delivery

Major Learning Outcomes: C programming HiFi instruction set

Brief Description of working environment, expectations from the company: Here mostly new recruits are from IIT Bombay (Mtech). Of all the things the one i liked the most is work culture. People are so cordial almost u can ask random person about anything he/she will be ready to help u out. They have tournament's like carrom ,TT ,Cricket(i was bided for 3.5k), Badminton, went to orphanage. During monsoon almost every weekend we went for trekking. So in all many fun activities happening almost every other weekend. Now since people here are really talented or worked hard to get here, so expect sincerity of some level and intellect(which every one of us has).

Academic courses relevant to the project: DSP, Mup C programming

Name: Devbrat Srivastava (2014A8PS0400D)

Student Write-up

Short Summary of work done during PS-II: ASIC Design flow broadly comprises of the following steps:

1. Synthesis including synthesis optimizations
2. Layout and Floorplanning including respective optimizations
3. Placement and Routing including layout optimizations
4. Verification. Repeat the flow if Verification failed.

My work dealt with correct Standard Cell initialization and Memory Instantiation in the Layout/Floorplanning Step, apart from general data population in csv files. All the scripts required a background knowledge of Perl/Shell scripting and all the modules Perl/CPAN has to offer. The programming knowledge to be applied was- Regular Expressions, Perl Data Structures comprising of Nested Arrays, Nested Hashes, and their combinations.

Tools used (Development tools - H/w, S/w): Perl, Unix Environment, Cadence Genus, Cadence Innovus, Cadence Voltus, Cadence Tempus

Objectives of the project: Physical Design Characterization Automation

Outcomes of the project: The automation scripts were required for a pre-existing Cadence proprietary flow. All tasks assigned to me were achieved.

Major Learning Outcomes: ASIC Design Flow, Perl and Shell Scripting, EDA Tools and their usage

Brief Description of working environment, expectations from the company: Cadence Design Systems boasts of an excellent work environment. They've been listed as one of the 'Top 100 Best Places to Work At' by the Fortune Magazine, and for good reason. The work environment is great! People are very helpful, timing is flexible, 5-day work week, subsidized lunch. The environment is really conducive for a fresher, as the learning opportunities are infinite. Any doubt or difficulty can be asked to anyone, the employees are that approachable. There is no office politics and people work towards the goal of maximum productivity. People here are engaged in a lot of extracurricular activities as well- both inside and outside the workplace. The administration goes out of their way to conduct various activities such as Carom/TT/Cricket Tournaments, celebrating a Traditional Day, Family Day, Thanksgiving Activities, Photography Competitions etc. Even outside of the workplace, be it mountain climbing, bike riding or sports, you'll find people doing it, and encouraging others to join them. Overall, an amazing place to work!

Academic courses relevant to the project: Analog and Digital VLSI Design, Operating Systems, Computer Architecture, Advanced VLSI Design

PS-II Station: Capillary Technologies - Testing Automation, Bangalore

Faculty

Name: Uma Maheswari Natarajan

Comments: Expectations from industry: These stations look for computer science students having knowledge on Java, Python and if possible web development experience. Also good analytical skills, decision making and communication skills.

Student

Name: Shubham Srivastava (2014A8PS0458P)

Student Write-up

Short Summary of work done during PS-II: I was required to develop, test and monitor the service layer for an api engine which was used to give recommendations on an e-commerce website. A springboot application was developed which generated the requested data from the database layer according to the API end point . Testing of the whole module was done. Testing used was Unit Testing and functional testing . A monitoring system was also developed which was used to keep our tabs on the performance of the api-engine module on performance metrics such as rps(requests per second) , percentile(time for each request) . This module was also developed in springboot . For visualization, the data was imported to grafana which was used for display purposes.

Tools used (Development tools - H/w, S/w): Eclipse , springboot framework, grafana , graphite

Objectives of the project: The objective of the project was to develop the service layer and a monitoring system for it.

Outcomes of the project: I developed a monitoring system which was used to keep a check on the performance of the api-engine.

Major Learning Outcomes: Major learning outcome was to understand the working of a monitoring system and the tools used in it. Another important learning was that of Aspect Oriented Programming.

Brief Description of working environment, expectations from the company: The working environment was excellent. The team was very supportive and my mentor helped me a lot . I was given enough time to explore a topic completely before starting to work on it.

Academic courses relevant to the project: Object Oriented Programming , Computer Networks

PS-II Station: Central Electronics Engineering Research Institute, Pilani

Faculty

Name: Pawan Sharma

Comments: Expectations from industry: The project was available in the domain of mechanical engineering with the requirement of knowledge in the area of MEMS. It was preferable that the student should have done a course on Introduction to MEMS as part of his curriculum. Prior experience on using MEMS simulator is always preferable and Coventware and Comsol are the most popular software used in the designing of MEMS and both are available with BITS Pilani and CEERI. The student had prior hands-on experience on these software which helped him design a MEMS based accelerometer. CEERI, Pilani being a core research oriented Organisation looks for thorough understanding of the basics from the student in the respective domain and possession of skill sets on related software is always an advantage.

Student

Name: Bhavesh Kumar Daryani (2014A3PS0206P)

Student Write-up

Short Summary of work done during PS-II: Designed a MEMS capacitive accelerometer and compared operating values of fabricated device to FEM design and theoretical calculations. It was research oriented.

Tools used (Development tools - H/w, S/w): Coventorware, MATLAB (software). MEMS lab with different process machines (sputtering, DRIE, etc.) mainly handled by the scientists themselves. (Hardware)

Objectives of the project: To analyse MEMS capacitive accelerometer

Outcomes of the project: Values of FEM were matching with fabricated device.

Major Learning Outcomes: Learned the process flow of how a device is fabricated and what kind of results are majorly required. Also learned design software "Covntorware"

Brief Description of working environment, expectations from the company: It is a research organization with scientists doing their research projects and you help them with either their projects or can take on any new project that you may like if scientists agrees to guide you.

Academic courses relevant to the project: I worked in MEMS field, for "Introduction to MEMS" was a big help. If you want to work on other projects like IC fabrication. Cognitive computing, etc. then related subjects will be very helpful.

PS-II Station: Infinera - VLSI Testing, Bangalore

Student

Name: Sagar Seth (2014A3PS0224P)

Student Write-up

Short Summary of work done during PS-II: The aim of my project was to find the optimal parameters for CDRs (retimer devices) present on different channels on company proprietary board for error free data transmission.

Python language was used as a tool to help in varying the parameters and thus finding the optimal region of operation. Many analog parameters were varied and it was monitored how they affect the performance. Some parameters have major effects on the error produced while some have only tertiary effects. Also some have an inverse relationship with the error produced. All these things were considered while designing tests for finding the optimal parameter values.

Bit Error Rate (BER), Mean Square Error (MSE), Horizontal & Vertical Eye openings (HEOs & VEOs), and Histogram widths were used as metrics to compare the performance of the channels. A very preliminary shallow neural network model was also made which was trained on previous data acquired. It was used to predict few of the values of the parameters.

Tools used (Development tools - H/w, S/w): Python language, JMP statistical analysis tool

Objectives of the project: To tune the CDRs(retimer devices) for error free data transmission.

Outcomes of the project: The optimal region of operation of the CDRs(retimer devices) was found. They were tested for long duration to be error free with those parameters.

Major Learning Outcomes: 1. Analog Verification

2. Python scripting

Brief Description of working environment, expectations from the company: The working environment is excellent in terms of professionalism. The team assigned to me was very helpful. They cleared all my doubts, even if they were very silly, with the same enthusiasm. Their work load is according to what you can handle. The only thing to remember is that the student has to show interest. If the student lacks interest then nothing can be done.

Academic courses relevant to the project: Communication Systems, Machine Learning

Name: Ameya Dhamnaskar (2014A3PS0187P)

Student Write-up

Short Summary of work done during PS-II: I worked in the Software Team of Infinera India Pvt Ltd. They work on automation of things around here. The work involves writing development scripts in Perl and Python. My major project involved Web Data Migration from swwiki to Confluence. The Project involved full back end transfer of information from existing rigid wiki database to Confluence. I also worked on automation Script which notifies developers and their team leads of their Pending auto merger.

Tools used (Development tools - H/w, S/w): S/w-File Handling ,Database Management and Perl Scripting

Objectives of the project: Migration of Web data. Automation of email notifier

Outcomes of the project: Successful transfer of web data. Automation Script written and implemented successfully.

Major Learning Outcomes: Database handling, File Handling and Developing Perl Scripts

Brief Description of working environment, expectations from the company: A perfect Atmosphere to work in. I was with a very Supporting and encouraging team. My manager and my Mentors were always constantly guiding and reaching out when encountering errors. They helped me understand the very basics of the project and cleared all my doubts throughout the term of the project. They both helped me to develop the skills and insight required to effectively work. Expectation of the Company include you to have basic knowledge of developing scripts as the majority of the project given to interns here involve you developing script.

Academic courses relevant to the project: OOP and DSA

Name: Akshay Borude (2014A3PS0393H)

Student Write-up

Short Summary of work done during PS-II: 1. The project is to find the bugs or any faults present in the IO_EXPANDER design (RTL) using different test cases and verify that the IO Expander is working as Expected. The System Verilog HDL and UVM (Universal Verification Methodology) is used to design the test cases. Also includes coverage of designed test cases (for line and Conditions).

2. Created a Python script which convert MS word document (.docx) files to required format of xml file (.xml) which later can be used to convert into register modules in Verilog using Perl parser script.

Tools used (Development tools - H/w, S/w): System Verilog, Verilog HDL, Python

Objectives of the project: Verification of I2C IO Expander

Outcomes of the project: Verification Test cases and docx_2_xml convertor python script.

Major Learning Outcomes: Hardware verification Methodology, Python Scripting

Brief Description of working environment, expectations from the company: Work environment is very good. No strict rules about timings and dress code everyone here is ready to help.

Academic courses relevant to the project: Comp Arch, Digital Design, ADVD, OOP.

PS-II Station: Intel - Computer and VLSI Architecture, Bangalore

Faculty

Name: Swapna Kulkarni

Comments: Expectations from industry: Intel India works in various areas like Motherboard chipsets, Network interface controllers and integrated circuits, Flash memory, Embedded processors, Software development, Biomedical Signal processing, Verification and Validation, Testing and Digital Image Processing and many more. The students are working in various projects like Development of Bluetooth Low Energy Firmware for Intel Bluetooth Controller (Chip), Assisted GPS & GLONASS development will be done for Intel GPS & GLONASS solution, Signal processing techniques to extract ECG in presence of motionnoise, Compressive Sensing, Power-efficient Architectures for Wearable Sensing Systems, Design and verification of leading edge IPs/SoCs and Development of tool for various applications. According to mentors feedback and observations, students need to be trained in scripting languages Perl,Tcl, etc, AMBA protocol, VLSI architecture and mobile Communications. Intel is also looking at new technologies in machine learning and embedded system. Student need to be prepared with new challenges and show some interest.

Student

Name: Shubham Gupta (2013B4A80666G)

Student Write-up

Short Summary of work done during PS-II: I worked on automation of test cases for Intel's server platforms. The work involved the use of Raspberry Pi and Python.

Tools used (Development tools - H/w, S/w): Raspberry Pi, Python

Objectives of the project: Automation of server platforms

Outcomes of the project: Achieved automation targets for three server platforms that are currently in production.

Major Learning Outcomes: Introduced to industrial level automation. I'd not worked with Raspberry Pi and Python before, and this was a great learning experience.

Brief Description of working environment, expectations from the company: Intel's work environment is pretty relaxed. Most teams are very young, and managers are directly involved with the interns. Interns get involved with ongoing projects, and are treated as regular employees. There are no fixed work hours, and are team-dependent. Most teams work on weekly goals. Overall, employees are encouraged to grow in a positive manner.

Academic courses relevant to the project: Computer Programming, Computer Architecture.

Name: Anjani Josyula (2014A8PS0500G)

Student Write-up

Short Summary of work done during PS-II: Server platform testing integration and validation.

Tools used (Development tools - H/w, S/w): Raspberry pi, python

Objectives of the project: To develop a cheaper and quicker method of automatic testing

Outcomes of the project: We were able to develop a better testing method

Major Learning Outcomes: Able to learn about server platform components and their requirements

Brief Description of working environment, expectations from the company: Very relaxed working environment with plenty of work. No pressure but very high expectations

Academic courses relevant to the project: Computer architecture, object oriented programming

Name: SANDEEP SHASHANK MOKARALA (2014A3PS0265H)

Student Write-up

Short Summary of work done during PS-II: Inference acceleration of deep neural networks with fpga based hardware accelerator. The development of the sw stack of the accelerator is the main focus of the work in our team. My work was mostly concerned with the graph optimizer in the software stack through code and imparting new features so that the hardware is utilized with maximum efficiency. My work also included optimizing the scripts that represent the higher levels of SW stack to UBUNTU platform, for the ease of the user.

Tools used (Development tools - H/w, S/w): Caffe, python, C++

Objectives of the project: Software development for a deep learning compiler which will facilitate accelerated performance and reduce power and area metric.

Outcomes of the project: Upgrades of new features to the code base of the graph optimizer are implemented, and scripts that stand in for the higher levels of the software stack are optimized to the user's ease.

Major Learning Outcomes: Machine Learning,(Neural nets in particular), python

Brief Description of working environment, expectations from the company: The work culture is very good. The team is supportive and friendly. It is really helpful

Academic courses relevant to the project: Machine Learning, Neural networks, Operating systems, Computer architecture.

Name: Siddharth Malayanur Kasyapa (2014A3PS0174G)

Student Write-up

Short Summary of work done during PS-II: Successfully designed a tool which can analyze a partition and provide useful statistics such as timing information, power consumption etc. which can help partition owners to optimize the design further. Learnt Perl and TCL scripting and working on IC II compiler. Learnt Floorplanning basics.

Tools used (Development tools - H/w, S/w): Perl, TCL scripting, IC 2 compiler tool, prime time tool

Objectives of the project: This project deals with creating a solution to find the most optimal placement of macro cells inside a partition so as to reduce power consumption and also meet timing constraints. The project will also help partition owners to calculate and analyze various factors such as pin density, fan-in/fan-out cones and EBB orientations and hence help them in finding an optimal solution for macro placement in the partition.

Outcomes of the project: Successfully designed a tool which can analyze a partition and provide useful statistics such as timing information, power consumption etc. which can help partition owners to optimize the design further.

Major Learning Outcomes: Perl and TCL scripting and floorplanning basics

Brief Description of working environment, expectations from the company: The working environment was very supportive. Both my mentor and manager helped a lot in clearing doubts about the project and also helped when i was stuck at a problem. The working environment is very conducive to thinking about different ways to solve problems and helps to grow your knowledge. The work is satisfying if you

are in the R&D departments. Otherwise, it is very monotonous for the people in Testing and verification teams and they don't have much scope to increase their knowledge.

Academic courses relevant to the project: ADVD, Computer architecture

Name: RADHIKA VASHISHTA (2014AAPS0241H)

Student Write-up

Short Summary of work done during PS-II: Neural networks require a vast amount of data and they are computationally intensive. Inference accelerators are employed to accelerate the neural networks and other machine learning workloads. My work involved incorporating upgrades into available code base for the graph optimizer of the inference accelerator. I also worked on development of an Inference Accelerator software stack meant to be run on Ubuntu to provide a uniform platform for end user utilization. I wrote scripts for setup verification, for developing provisions for additional command line parameters to be used and to discard redundant files to reduce memory occupancy.

Tools used (Development tools - H/w, S/w): Caffe , Python, Shell, C ++

Objectives of the project: Software development for a deep learning compiler which will facilitate accelerated performance and reduce power and area metric.

Outcomes of the project: The upgrades to the code base for graph optimizer were added. Inference accelerator software stack was developed for Ubuntu platform and was made more efficient by introducing user friendly features.

Major Learning Outcomes: Learnt about machine learning, specifically neural networks. Also learnt about scripting using python and shell.

Brief Description of working environment, expectations from the company: The working environment is very good. The colleagues and mentors are very patient and supportive. We are eased into the working environment and brought up to speed by being given various ramp up tasks.

Academic courses relevant to the project: Machine learning, Neural networks

PS-II Station: Intel - Embedded Software, Bangalore

Faculty

Name: Swapna Kulkarni

Intel India works in various areas like Motherboard chipsets, Network interface controllers and integrated circuits, Flash memory, Embedded processors, Software development, Biomedical Signal processing, Verification and Validation, Testing and Digital Image Processing and many more. These students are working in various projects like Development of Bluetooth Low Energy Firmware for Intel Bluetooth Controller (Chip), Assisted GPS & GLONASS development will be done for Intel GPS & GLONASS solution, Signal processing techniques to extract ECG in presence of motion noise, Compressive Sensing, Power-efficient Architectures for Wearable Sensing Systems, Design and verification of leading edge IPs/SoCs and Development of tool for various applications. According to mentors feedback and observations, students need to be trained in scripting languages Perl, Tcl, etc, AMBA protocol, VLSI architecture and mobile Communications. Intel is also looking at new technologies in machine learning and embedded system. Student need to be prepared with new challenges and show some interest.

Student

Name: Kalpit Munot (2014A8PS0259P)

Student Write-up

Short Summary of work done during PS-II: Work done here at Intel was mainly script development and Header files development. Scripts now assists the team to understand the logs better and get the relevant data much faster. The Header files are for the new modern way for tracing and debugging thus with these Header files the team migrated to Standardized tracing ways from the legacy tracing.

Tools used (Development tools - H/w, S/w): MATLAB, Code Composer

Objectives of the project: Enhancement

Outcomes of the project: Better understanding of the logs and standardized tracing ways

Major Learning Outcomes: Learnt 7 different languages and how does the code distribution works in a big organisation

Brief Description of working environment, expectations from the company: Work environment is good, Everyone here is helpful but most of the time they are busy.

Academic courses relevant to the project: Mobile Telecommunications

Name: Raghava Raj E (2014A3PS0831H)

Student Write-up

Short Summary of work done during PS-II: This project has contributed as a part of new product development of later version of XMM 7560 modem along with improving the efficiency of the already

existing XMM 7560 modem. Project involves optimization of Scheduler, HSDPA modules of the XMM 7560, Propagation and adaptations for AM, HSDPA modules of later version of XMM 7560, making cmake files for, HSDPA and other modules that manages the build process in an operating system and in a compiler-independent manner, XML file for request messages of a module which is used for generating header files, temperate testing of XMM 7560 and analyzing the test result.

Tools used (Development tools - H/w, S/w): S/w C Programming

Objectives of the project: Optimization, Propagation, MT build in WCDMA Firmware

Outcomes of the project: Making necessary adaptations to later version of XMM 7560 and increasing the efficiency of the Intel modem XMM 7560

Major Learning Outcomes: Learnt about UMTS 3G Physical layer with specialized learning in the field of HSDPA (High Speed Data Packet Access) . Understood the flow of the system of how signal is transmitted and the challenges faced.

Brief Description of working environment, expectations from the company: The company expects us to be good coders with good knowledge about communication systems. The work environment facilitates learning and gives the students a platform to work with experts in the field of mobile communication. I am very happy that I could get the exposure of how the industry works and contribute to the actual product development i.e Intel modem XMM 7560 and XMM 7660.

Academic courses relevant to the project: Communication Systems

Name: Madhulika jaladi (2013B4A80634H)

Student Write-up

Short Summary of work done during PS-II: Involved optimisation, propagation and MT build environment of physical layer of WCDMA in later version of XMM7560

Tools used (Development tools - H/w, S/w): Source insight

Objectives of the project: Making necessary adaptations to later version of XMM 7560.

Outcomes of the project: This project has contributed as a part of new product development of later version of XMM 7560 modem along with improving the efficiency of the already existing XMM 7560 modem.

Major Learning Outcomes: Practical understanding of WCDMA physical layer

Brief Description of working environment, expectations from the company: Helpful mentors and flexible timings. Good coding skills(C, C++), basic understanding of communication systems, signal processing is expected

Academic courses relevant to the project: Communication systems, DSP

PS-II Station: Intel - GPU and VLSI Design, Bangalore

Faculty

Name: Swapna Kulkarni

Comments: Expectations from industry: Intel India works in various areas like Motherboard chipsets, Network interface controllers and integrated circuits, Flash memory, Embedded processors, Software development, Biomedical Signal processing, Verification and Validation, Testing and Digital Image Processing and many more. The students are working in various projects like Development of Bluetooth Low Energy Firmware for Intel Bluetooth Controller (Chip), Assisted GPS & GLONASS development will be done for Intel GPS & GLONASS solution, Signal processing techniques to extract ECG in presence of motionnoise, Compressive Sensing, Power-efficient Architectures for Wearable Sensing Systems, Design and verification of leading edge IPs/SoCs and Development of tool for various applications. According to mentors feedback and observations, students need to be trained in scripting languages Perl,Tcl, etc, AMBA protocol, VLSI architecture and mobile Communications. Intel is also looking at new technologies in machine learning and embedded system. Student need to be prepared with new challenges and show some interest.

Student

Name: Harshita Prabha (2014A8PS0254P)

Student Write-up

Short Summary of work done during PS-II: Studied various architectures of D Flip Flops and simulated them. Closed an RTL block through the synthesis, placement and routing flow.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso, Design Compiler, IC Compiler II, Calibre

Objectives of the project: To close an RTL block using synthesis, placement and routing.

Outcomes of the project: Closed an RTL block.

Major Learning Outcomes: Learnt the PNR tool flow used by back end VLSI designers.

Brief Description of working environment, expectations from the company: Comfortable working environment. Amount of work given depends on the team. If you have specific doubts, the mentors will be helpful.

Academic courses relevant to the project: Digital Design, Computer Architecture

Name: Samuel Pakalapati (2014AAPS0176H)

Student Write-up

Short Summary of work done during PS-II: Automated ASIC-FPGA conversion, programmed device drivers - I2C, SPI, DMA, optimized code

Tools used (Development tools - H/w, S/w): Python, Intel tools

Objectives of the project: To do things faster, generic driver programming, optimize code

Outcomes of the project: Can do things faster now(automation), increased productivity(generic drivers) and optimized code

Major Learning Outcomes: Learnt python, c++, intel validation tools

Brief Description of working environment, expectations from the company: Good environment. Can learn things in SoC, chip design. Company does not expect a lot from undergrads.

Academic courses relevant to the project: Computer architecture, embedded systems, c programming

Name: G. Sree Ram Charan (2014A3PS0375H)

Student Write-up

Short Summary of work done during PS-II: Designed a FIFO which can give the occupancy details at any point of access and Profiling of various FIFO in the design.

Tools used (Development tools - H/w, S/w): System Verilog S/w, VCS Sim.

Objectives of the project: Reduce the validation environment complexity, BFM parametrization

Outcomes of the project: Obtained optimized FIFO parameters, Successfully implemented the Coverages

Major Learning Outcomes: Designing of Memory elements and simulation, Analysis of test reports and debugging and fixing the errors

Brief Description of working environment, expectations from the company: One of the coolest working environments, one would like to find themselves in. Flexibility in the working hours and project topics are interesting and challenging too. The team in which i have worked is one of the bests out of Intel's VPG Teams. Got a lot of support and help from the members of the team whenever i approached them on some issue.

Academic courses relevant to the project: Computer Architecture and Verilog

Name: Bharat Garg (2014A8PS0438H)

Student Write-up

Short Summary of work done during PS-II: Worked on Front End RTL designing of subsystems.

Tools used (Development tools - H/w, S/w): coreAssembler, coreBuilder, Verdi (Synopsys)

Objectives of the project: To design and integrate subsystem

Outcomes of the project: Front End RTL design of the subsystem

Major Learning Outcomes: Front End SoC design

Brief Description of working environment, expectations from the company: Working environment is great. Team was supportive and encouraging.

Academic courses relevant to the project: ADVD

Name: T.V.Srividya(2014AAPS0246H)

Student Write-up

Short Summary of work done during PS-II: I automated the process of information extraction from all the Physical design and verification reports using PERL. I also got acquainted with Dc Compiler and IC Compiler and used the compilers to generate a physical implementation of a sample RTL block. I used verification tools to check the functionality of the design, many of which are confidential.

Objectives of the project: Physical Design Convergence Analysis

Outcomes of the project: The Physical Design report extraction was automated. I also developed the physical implementation of a sample RTL block using the Physical Design tools.

Major Learning Outcomes: I got acquainted with the different tools used in Physical design and all the verification tools.

Brief Description of working environment, expectations from the company: The working environment was very good and the employees were very encouraging.

Academic courses relevant to the project: Digital design, Analog and Digital VLSI Design

Name: Kriti Sharma (2013B2A80854H)

Student Write-up

Short Summary of work done during PS-II: Embedded system design complexities are growing exponentially. Demand has increased for modeling techniques that can provide both accurate measurements of delay and fast simulation speed for use in design space exploration. Previous efforts have enabled designers to estimate performance with Transaction Level Modeling (TLM) of software processors but this technique typically does not account for the effect of memory latencies. The current validation approach is F produces a dump file before the simulation is run, during simulation; the RTL signals are compared against this dump file and mismatches recorded in an error file. The problem with this approach is that it only works well for checking logic which has non-temporal behavior. If the logic has any temporal behavior (meaning the answer is different depending on the arrival time of events), it does not work. So a new methodology has been introduced to achieve better validation.

Tools used (Development tools - H/w, S/w): gnr elab for compilation and verdi for simulation

Objectives of the project: To create TLM Based Emulation Trackers

Outcomes of the project: Came out with a new methodology to create trackers

Major Learning Outcomes: Became proficient in VLSI Design

Brief Description of working environment, expectations from the company: Intel has a good infrastructure and it's a pretty awesome work place. Work depends what kind of team you get to work for. So most of these teams don't care much for the interns and they don't end up giving them a lot of work but you can always go around and nudge them for work and then there are teams who give a lot of work to the interns. Work is interesting but it depends on your interests too. If you liked DD and ADVD so you'll enjoy most of the work here. It's essential to know either of these 4 languages based on your work i.e. Tcl , Perl , Python or Verilog. Most people do coding work as most of the work is tool based.

Academic courses relevant to the project: Digital Design, Analog and Digital VLSI Design

Name: Anant Anurag (2014A3PS0184P)

Student Write-up

Short Summary of work done during PS-II: Revision of Digital VLSI Design from the course Analog and Digital VLSI Design. Analysis of CMOS Inverter with respect to latest process technology and SPICE simulation of various parameters relevant to Digital Circuit Design. Analysis of Various topologies of D Flip Flops in the current process technology. Study of D Flip Flops with Scan Chain Ports for Design for Testability. Study of Power Consumption of Buffered Flip Flops and non-buffered D Flip Flops. Optimization Study of Clock Gating Cell. Synthesis of Gate-level Netlist from Behavioral RTL and Physical Design of chip from the Gate-Level Netlist. Development of Standard Cell Design in multiple formats to be used in Design Flows.

Tools used (Development tools - H/w, S/w): Synopsys Design Compiler, Synopsys IC Compiler 2, Cadence Virtuoso

Objectives of the project: To reach highest achievable timing closure of given RTL design and estimate power consumption of the clock tree based on usage of Buffered and Non-buffered D Flip Flops

Outcomes of the project: The primary outcome of the project being to develop skills to achieve timing closure at high frequency.

Major Learning Outcomes: Learned major Industry standard VLSI synthesis and design tools and navigate through those tools to obtain desired results

Brief Description of working environment, expectations from the company: Being a short term intern with intent to return to institute instead of continuing work with team after PS-II, special project was devised only for the purpose of the internship that was not directly related to the objectives of the team. The work done and documentation generated helped the team indirectly by providing them feedback on the usage of standard cells designed by them. The strategy used by the team thus was useful for them and immensely beneficial for me as it offered me the chance to diverge from the weekly targets required to be achieved by the team and do an independent study and project

Academic courses relevant to the project: Digital IC Design

PS-II Station: Intel - Machine Learning, Bangalore

Faculty

Name: Swapna Kulkarni

Comments: Expectations from industry: Intel India works in various areas like Motherboard chipsets, Network interface controllers and integrated circuits, Flash memory, Embedded processors, Software development, Biomedical Signal processing, Verification and Validation, Testing and Digital Image Processing and many more. The students are working in various projects like Development of Bluetooth Low Energy Firmware for Intel Bluetooth Controller (Chip), Assisted GPS & GLONASS development will be done for Intel GPS & GLONASS solution, Signal processing techniques to extract ECG in presence of motionnoise, Compressive Sensing, Power-efficient Architectures for Wearable Sensing Systems, Design and verification of leading edge IPs/SoCs and Development of tool for various applications. According to mentors feedback and observations, students need to be trained in scripting languages Perl,Tcl, etc, AMBA protocol, VLSI architecture and mobile Communications. Intel is also looking at new technologies in machine learning and embedded system. Student need to be prepared with new challenges and show some interest.

Student

Name: Abhishek Tandon (2014A4PS0360P)

Student Write-up

Short Summary of work done during PS-II: In my first project, I had to develop an application which will predict the usage mode of the device - whether user is using laptop kept in desk or in lap. The idea was to provide intelligent thermal strategies for the two scenarios.

For my second project, I had to develop a deep learning application, which can be used to recognize material labels of objects in images and to enable haptic feedback in games using this material knowledge.

Tools used (Development tools - H/w, S/w): Caffe deep learning library, OpenCV, Weka Machine Learning tool, C#, GPU Usage

Objectives of the project: 1st Project: Develop an algorithm to run in application level in CPU to predict usage mode. Project 2: To develop an API layer which uses a deep learning model to analyse image scenes and provide material values for different objects.

Outcomes of the project: Developed a windows C# application which can be launched in upcoming systems. For my second project, I released an API which used a deep learning model for image analysis.

Major Learning Outcomes: I understood the concept behind deep learning tasks i.e. Classification task, Object Detection and Image Segmentation. I also learned in and out of the Caffe deep learning library.

I also learnt how to use machine learning algorithms on sensor data and deploy a machine learning and develop a windows application on C#.

Brief Description of working environment, expectations from the company: I was a part of gaming systems team and I used to sit in the gaming lab. We had separate desks allotted to each of us with the desktops or other devices. The company is expected to keep the employees motivated to work, and the company delivers on this. Moreover, the company does a great job in providing a good working environment.

Academic courses relevant to the project: Machine Learning

PS-II Station: Intel - Testing & Verification, Bangalore

Faculty

Name: Swapna Kulkarni

Comments: Expectations from industry: Intel India works in various areas like Motherboard chipsets, Network interface controllers and integrated circuits, Flash memory, Embedded processors, Software development, Biomedical Signal processing, Verification and Validation, Testing and Digital Image Processing and many more. The students are working in various projects like Development of Bluetooth Low Energy Firmware for Intel Bluetooth Controller (Chip), Assisted GPS & GLONASS development will be done for Intel GPS & GLONASS solution, Signal processing techniques to extract ECG in presence of motionnoise, Compressive Sensing, Power-efficient Architectures for Wearable Sensing Systems, Design and verification of leading edge IPs/SoCs and Development of tool for various applications. According to mentors feedback and observations, students need to be trained in scripting languages Perl, Tcl, etc, AMBA protocol, VLSI architecture and mobile Communications. Intel is also looking at new technologies in machine learning and embedded system. Student need to be prepared with new challenges and show some interest.

Student

Name: BAIKADI PRANAY KUMAR REDDY (2014A8PS0465P)

Student Write-up

Short Summary of work done during PS-II: I was a part of FEV (Formal Equivalence Verification) team in the HPG (High Velocity Project) group of Intel. FEV is a crucial part of the physical design flow, which proves or disproves the equivalence of two designs by using complex mathematical algorithms. The equivalence check could be done for RTL vs RTL, RTL vs compile, RTL vs synthesis, synthesis vs APR and so on. Intel, so does any other chip manufacturing company i guess, uses milestones to signify the progress in their project. For each milestone we will be getting new RTL, APR, SYN which would either be a slight or significant modification of the earlier milestone. Our job is to ensure that various stages of a partition (synthesis, APR, rtl) are logically equivalent to one another. We used cadence Conformal for this purpose. The flow to check the equivalence is pretty much automated by a back-end team. Once we fire the flow and the runs come out, we have to see if there are any non equivalents present in the two designs. If so, we start debugging to see why those noneqs are present, setup the necessary overrides and refire runs and continue this process until we have zero NonEqs.

Tools used (Development tools - H/w, S/w): Cadence Conformal

Objectives of the project: Understanding formal equivalence verification

Outcomes of the project: I am the FEV owner of 5 partitions. I started at 0.5 mile in July, now we are at 1p0 as of December. I got all my partitions clean as of now.

Major Learning Outcomes: Understanding Formal Equivalence Verification

Brief Description of working environment, expectations from the company: The working environment is pretty much like any other corporate company. One thing that i observed from my coworkers here is that they are highly competitive and are always willing to learn. They pay extreme attention to detail. Currently there is a massive expansion going on the Intel as a whole and there is a lot of hiring happening. Some of us including myself were offered a position here but they wanted us to join in January, which obviously was not possible as it is against academic rules. Mentors and Managers here are inclined towards M.Tech or M.E. interns, which is to be expected i suppose as they are significantly more exposed to the field of electronics (or an equivalent field you name) than us the B.E interns.

Thankfully my PS2 project was decent and i was able to contribute a considerable chunk to the ongoing HPG project, which is to be taped in soon. But i heard my other peers here say their projects are not very good. So i guess Intel Environment will be well suited for ME graduates more than BE undergraduates.

Academic courses relevant to the project: Digital Design, ADVD

Name: Vaibhavdeep Singh (2013B4A30663G)

Student Write-up

Short Summary of work done during PS-II: Developed Test cases to simulate the physical layer for modems.

Tools used (Development tools - H/w, S/w): S/w-C++, XML, STT, Linux.

Objectives of the project: To port a certain number of Test cases before silicon arrival

Outcomes of the project: Ported as many test cases as possible and covered most of the scenarios

Major Learning Outcomes: Hands on experience on mobile communications and simulation of the entire process of 2G, 3G.

Brief Description of working environment, expectations from the company: Worked with a very efficient team with the manager as our team lead.

Academic courses relevant to the project: Communication systems, Mobile telecommunication networks.

Name: P Karthik Prabhu (2014A8PS0456P)

Student Write-up

Short Summary of work done during PS-II: Porting of test cases to validate working of the firmware (physical layer) of the base-band modem for 3G (UMTS).

Tools used (Development tools - H/w, S/w): S/w = C++, Linux shell

Objectives of the project: To validate working of firmware (physical layer) of the modem by simulating testcases in VP(Virtual Platform)

Outcomes of the project: Validation of firmware(physical layer)

Major Learning Outcomes: Base-band Modem Development

Brief Description of working environment, expectations from the company: Intel Communication & Devices Group(iCDG) provides a good learning opportunity for those interested in Communication Firmware development and validation.

Academic courses relevant to the project: Mobile Telecommunication Networks

Name: Kandukuri Sai Omkar (2014A3PS0153G)

Student Write-up

Short Summary of work done during PS-II: Developed test cases to test the features iRAT and QBAS. Verifying the same on legacy modems and new modems by Intel. Learnt the architecture of 3G modems and functioning/procedural flow of working of the Hardware. Hands-on-experience with multiple test equipment of industry standards.

Tools used (Development tools - H/w, S/w): R&S Wideband Radio Communication tester, R&S Signal Analyzer, R&S Vector Signal Generator, Visual Studio, Tracing tools.

Objectives of the project: This projects aims to test new features that are about to get integrated in the new 3G modems developed by Intel. Development test cases to test the feature iRAT, which helps customers get faster switching speeds between different radio access terminologies such as 2G, 3G and 4G and QBAS feature will help in reducing the power consumption of antennas by smart switching.

Outcomes of the project: Both the features are new with no testing done before on these, hence upon developing the test cases, these would act as legacy test cases which help Intel to adapt the same for legacy, present and future 3G modems. These test cases can be used as reference in respect to these features when there is an architectural change or framework changes in future.

Major Learning Outcomes: Learned the functioning of the 3G mobile technology, Layer1 and how testing is done in both hardware and software perspective. Learned how the industry level equipment work and what the industry standards are.

Brief Description of working environment, expectations from the company: I had to work for nearly 12-16 hours a day. Though the work is not much hectic the amount of expectations are high from the manager and mentor regarding work progress. Daily tasks that were handled by team are more in number and as the team is small in number, many other teams had provided enough support in producing the results. Weekly meetings with mentor and senior managers helped both them and me to track the performance and appreciate the same. There were lot of new things to learn and mentor made sure that i learned everything in a timely manner before getting into actual work. This helped increase my productivity and deliver results in an efficient manner.

Academic courses relevant to the project: Mobile Telecommunication Networks.

PS-II Station: Mentor Graphics, Noida

Student

Name: AKSHIT GOEL (2013B5A3827G)

Student Write-up

Short Summary of work done during PS-II: I have been learning a lot of new softwares used in automation(eda) during my PS-II at Mentor Graphics,Noida . My PS-II started with a workshop on System Verilog which helped me revised concepts of digital and analog electronics .Further this workshop helped me gain knowledge about the use of System Verilog in the work and its differences with the traditional software Verilog used at basic level in the electronic industry. On further progressing in my PS2 I have learnt many scripting languages i.e tcl scripting and CShell scripting which are widely used in automation and implementation of the HDLEngine tool used by our team. At the end I am continuing the testing of the tool using my knowledge of C++ and System Verilog . I have written testcases on System Verilog and further testing is done using C++ code. One of the main constituent of my project was to deploy grid mode for testing which involved automation using Cshell script and meant for speeding up the process of verification atleast by half an hour. Some of the crude suggestions from my mentor and guidance from our practice school instructor R.K Tiwary sir helped me throughout the project to do patient testing inorder to develop the tool. As course suggestion I would suggest courses like Advanced VLSI to be done as disciplinary electives. Further research work is possible in my project including new techniques of testing, to improve the tool based on different techniques and new innovation in different operations on HDL(Hardware Description Language). A paper can be published on the same work.

Tools used (Development tools - H/w, S/w): CShell scripting,tcl scripting, C++ ,System Verilog

Objectives of the project: Project was meant for testing and development of HDLEngine Tool which provides HDL modification.

Outcomes of the project: On further progressing in my PS2 I have learnt many scripting languages i.e tcl scripting and CShell scripting which are widely used in automation and implementation of the HDLEngine tool used by our team. At the end I am continuing the testing of the tool using my knowledge of C++ and System Verilog . I have written testcases on System Verilog and further testing is done using C++ code.

Major Learning Outcomes: Learning CShell scripting, tcl scripting and CAPP(C++) are the major learning .

Brief Description of working environment, expectations from the company: Working environment was suitable for coding. Company expected me to give a good quality output producing system verilog testcases and carrying further testing.

Academic courses relevant to the project: Digital Electronics, Analog Electronics and ADVD (Analog and Digital VLSI Design) ,C programming.

Name: Gandhi Anshul (2013B3A30633G)

Student Write-up

Short Summary of work done during PS-II: I worked in the emulation division of Mentor Graphics. We developed transactors (programs which allow software generated inputs stimulate hardware). The hardware IP which is written in HDL code is emulated onto the emulator which receives this software generated stimulus. I worked on the testing of transactors of AXI and APB protocols. I also worked on the development of transactors of automotive protocols namely LIN and CAN.

Tools used (Development tools - H/w, S/w): C++, System Verilog, UVM

Objectives of the project: Testing to transactors of AMBA protocols

Major Learning Outcomes: Learned System Verilog, C++ and UVM. Also learned the working of AMBA protocols.

Brief Description of working environment, expectations from the company: My PS 2 at Mentor Graphics has been a great experience. The employees at the company have been very helpful and nurturing an excellent work environment. Work timings in the company are quite flexible and most employees are fairly approachable. Most teams here work on software related tools and applications so an elementary understanding of object oriented programming would be quite helpful. The company also provides good quality lunch and subsidized breakfast. I would recommend this PS to electronics students who are interested in Digital electronics and those who would like to venture into the software domain.

Academic courses relevant to the project: Digital Design, Object Oriented Programming

Name: Rahul Agarwal (2014A3PS0594H)

Student Write-up

Short Summary of work done during PS-II: Metastability refers to signals that do not assume stable 0 or 1 states for some duration of time at some point during normal operation of a design. In a multi-clock design, metastability cannot be avoided but the detrimental effects of metastability can be neutralized. a CDC signal must be properly recognized or recognized and acknowledged before a change is permitted on the CDC signal. In both of these scenarios, the CDC signals will require some form of synchronization into the receiving clock domain. My work in CDC was cut short as the team member who was working with me had to leave and so I was moved to the lint team which basically writes checks to detect potential design or logical errors early in the design cycle. The checks in LINT are of 5 types which are RTL Design Style, Simulation, Synthesis, Connectivity, Advanced, Naming. But as the software team is based on R&D I™ve been asked to cut short this report to the check names and their descriptions.

Tools used (Development tools - H/w, S/w): Vim, GDB, Questa simulator(Mentor graphic's product)

Objectives of the project: To develop the architecture of the lint tool

Outcomes of the project: Made a substantial improvement in the architecture and wrote a lot of individual checks in the tool.

Major Learning Outcomes: C++, Data Structures and Algorithms, VHDL.

Brief Description of working environment, expectations from the company: Working environment is decent but people are very inert and are less enthusiastic about the work.

Academic courses relevant to the project: Analog Digital VLSI Design, Digital Design, C++, Data Structures and Algorithms

Name: AKASH YADAV (2014AAPS0221H)

Student Write-up

Short Summary of work done during PS-II: I had been assigned with a sub task of an ongoing development in 'Power Aware' feature of the tool. Going in chronological order, my internship started with 'System Verilog' training by Senior Employees of Mentor Graphics. My project mostly involved Tcl scripting. However, I needed to revise the concepts of power management strategies like clock gating, power gating, multi-threshold optimization, multi voltage, etc which was covered in Analog & Digital VLSI Design (ADVD) course. To test my scripts I had to write testcases which comprised of System Verilog design files and UPF (Unified Power Format) files. I had a training on UPF, a language to implement power aware strategies to RTL design. I wrote tcl functions to help designers while implementing the low power strategies. I also added support to few features in the tool to enhance the user accessibility.

Tools used (Development tools - H/w, S/w): C, Tcl, UPF (Unified Power Format), System Verilog

Objectives of the project: To write Tcl functions & add support to unsupported features.

Outcomes of the project: I was able to understand the architecture of the tool and add useful features to it.

Major Learning Outcomes: System Verilog, Tcl Scripting, UPF (Unified Power Format), C

Details of papers/patents: A part of my implementation was used by my mentor in a Conference Paper (DVCon, US)

Brief Description of working environment, expectations from the company: Being my first experience in a corporate office, I learnt many things here. The working environment here is very healthy and very less restrictions as such. Team members were very friendly and helpful. I could ask any thing from a silly doubt to the abstract of the whole architecture of the code, and would get proper explanations. My ideas as well as my doubts were considered properly. I was given proper training and time to learn the required coursework.

Academic courses relevant to the project: Basic Programming Language, Data Structures & Algorithms, Digital Design, Analog & Digital VLSI Design

Name: Agrim Agarwal (2013B2A80799G)

Student Write-up

Short Summary of work done during PS-II: I worked with VTLQA team in Mentor Graphics .Our job was to verify the design developed by the VTL team by developing UVM based Test bench using System verilog and verilog. Protocol I am working on in eDP and it is my responsibility to understand the protocol and develop the test bench with my mentor.

Tools used (Development tools - H/w, S/w): Questa Sim

Objectives of the project: To Verify the IP

Outcomes of the project: Still ongoing

Major Learning Outcomes: We got the chance to learn about the verification part of electronics engineering

Brief Description of working environment, expectations from the company: Company provides a good working environment and treats its intern as good as its employees.My team is helpful.One should know that a lot of work here is done in C and C++ and one should have a fair understanding of these subjects.Though my work was on verilog and System Verilog

Academic courses relevant to the project: Digital Design,Data Communications,OOP,Communication Systems

PS-II Station: National Instruments Systems (India) Pvt. Ltd., Bangalore

Student

Name: GOPI SAI CHARAN POPURI (2014AAPS202H)

Student Write-up

Short Summary of work done during PS-II: Collecting data of the connected hardware devices and installed softwares for the new application that is being developed

Tools used (Development tools - H/w, S/w): Visual Studio, NI pxi devices, NI package manager

Objectives of the project: To collect data for making business decisions

Outcomes of the project: Gathering data for making future business decisions

Major Learning Outcomes: Learnt application development

Brief Description of working environment, expectations from the company: You get a decent working experience with corporate lifestyle, friendly and helpful employees with regular perks

Academic courses relevant to the project: Object oriented programming

PS-II Station: Nvidia Graphics - Hardware, Bangalore

Faculty

Name: Swapna Kulkarni

Comments: Expectations from industry: The Hardware division of NVIDIA Graphics, Bengaluru deals with architecture, design, development and verification work related to GPUs and SoCs of NVIDIA. The work requires expertise in Digital Design, VLSI Design, Architecture Modelling of chips, Synthesis, Low Power Design, Circuit Design and Place and Route of complex VLSI chips. A large chunk of the work at each stage of the Chip involve Verification and Validation. Since the complexity is very large, entire design and verification process require a lot of automation. Hence such a work demands expertise in various scripting languages like Unix Shell Scripting, Perl, Python and Tcl/Tk. Programming languages like Verilog, System Verilog, System C and C++ are necessary for design and verification of such complex circuits. Knowledge of Computer Architecture is essential for working in NVIDIA chips. Of course it is known that the interns may not have expertise in all of the mentioned topics. But it is expected that the interns should be fairly good in on Digital Design, Computer Architecture, Microprocessors, Verilog, Unix Shell Scripting, C++ etc. Knowledge on Python, Perl, Tcl/Tk, System Verilog, System C, Low Power VLSI design will definitely reduce the ramp-up time. Moreover enthusiasm to learn, faster ramp-up, proactiveness, a positive attitude are must have qualities required for the industry. NVIDIA Authorities are quite helpful supportive in integrating the student interns into the mainstream activities. The interns work on live projects of NVIDIA and they often interact with the teams located across globe. Indeed it is a great opportunity for an intern to work in NVIDIA Bengaluru (both Hardware and Software divisions).

Student

Name: B Naga Sanjana (2014AAPS0309H)

Student Write-up

Short Summary of work done during PS-II: Debugging and supporting the system modelling team for integrating the hybrid model of virtual CPU and System FPGA SoC

Tools used (Development tools - H/w, S/w): Verdi, build system(tool chain)

Objectives of the project: Integrating virtual CPU platform with System FPGA SoC

Outcomes of the project: The hybrid model has reached to the stage of kernel boot

Major Learning Outcomes: Learnt about build systems, UART 16650 protocol, kernel boot and c++ language

Brief Description of working environment, expectations from the company: Great work environment.

Academic courses relevant to the project: Embedded systems, Operating systems and computer architecture

Name: Jaya Sahithi Konda (2014AAPS0025H)

Student Write-up

Short Summary of work done during PS-II: Worked with Memory Part of the chips for design for testing. there is a need to initialize the RAM in a certain way so as to avoid garbage values and to gain a Controllability and Testability to the memory chips. So a script is created to initialize the Memory to a checkerboard pattern so as to use it in the verification using the automatic test pattern generating tool.

Tools used (Development tools - H/w, S/w): TetraMax, VCS, Farm Machines, Perforce

Objectives of the project: To make the verification of chips more testable.

Outcomes of the project: Covering more number of faults in the testing flow so as to get more fault coverage.

Major Learning Outcomes: I had a first hand experience of working in a major company, learnt how to work with team members, realized how actual work is different from the studying curriculum in college.

Brief Description of working environment, expectations from the company: Very great and friendly environment, open to help new comers and always ready to help out with any doubts. The company is mostly happy with our PS program and it would be better to the interns if they have done few courses which will be required in the internship.

Academic courses relevant to the project: VLSI, Design for Testing.

Name: Vishnu Sharma R K (2013B5A30467P)

Student Write-up

Short Summary of work done during PS-II: The main objective of the project was to design an infrastructure to track memory requests. This enables the architect to be better equipped to debug performance issues and experiment with new features as it provides important stats required to study latency and stalls.

Tools used (Development tools - H/w, S/w): Python Libraries such as Bokeh, Pandas, Holoviews, and Glueviz for data plotting and visualization.

Objectives of the project: The objective of the project was to provide infrastructure support for tracking individual memory access requests. This would enable study of latencies and stalls in the pipeline and help in designing better pathways that results in less time and avoids bottlenecks

Outcomes of the project: Apart from learning a lot from the project, it helps debug complex test cases and identifies performance issues in the memory pipeline

Major Learning Outcomes: Learned Perl, Python, C++, and better coding practices. Also had a very good exposure to GPU and Tegra architectures, adding to my knowledge of computer architecture

Brief Description of working environment, expectations from the company: NVIDIA has been a great place for me to learn. I've learnt a lot in the past few months and really enjoyed working on the project assigned to me. The work atmosphere is highly supportive and constructive. On one hand, there's always help available when one's stuck, and on the other, there is enough room to learn by trying new

things out even if it results in failure. This internship has provided me with an immense platform to further both my technical and soft skills

Academic courses relevant to the project: Computer architecture, Digital Design

Name: BELLAMKONDA NAGA SAI VEENADHARI (2014AAPS0077H)

Student Write-up

Short Summary of work done during PS-II: My work in PS included automation of launching regressions with a help of a GUI, Refactoring an interrupt service routine file and python script for documenting the test variables called plusargs

Tools used (Development tools - H/w, S/w): python, System verilog, VMM, Qt Designer.

Objectives of the project: Documentation of plusargs, Refactoring of Interrupt xactor and GUI to launch regressions.

Outcomes of the project: Documentation of plusargs (generated excel sheet containing usage of plusarg), Refactoring of Interrupt xactor(separated host and device mode) and GUI to launch regressions.

Major Learning Outcomes: Python and System Verilog

Brief Description of working environment, expectations from the company: Work culture were good and managers and team members were very helpful. Learnt a lot of new things along with new technologies and languages. As an intern, most of my work was automation.

Academic courses relevant to the project: Computer Architecture, C programming, Data structure and algorithms, OOPs

Name: Neha Mittal (2014AAPS0259H)

Student Write-up

Short Summary of work done during PS-II: Projects deal with verification of pre-silicon power estimation features, involves debugging of errors and their fixes, alternate calculations are done in python scripts to arrive at the expected output. Some trend checks followed by consistency checks and absolute checks were done.

Tools used (Development tools - H/w, S/w): Python and Microsoft Excel

Objectives of the project: Verification of Power Estimation features

Outcomes of the project: Verification of features like leakage power estimation with power gating enabled, input sanity check for leakage power, optimizing minimum required voltage for a chip to deliver the best performance per power consumption, verification of DRAM bandwidth and power consumed in display for different applications and memory types, efficient bin selection having frequency, power, yield constraints using optimized techniques are completed.

Major Learning Outcomes: Python scripting, power related basic concepts, use of Microsoft Excel for sorting, filtering of the data provided and plotting curves

Brief Description of working environment, expectations from the company: Great working environment, people are friendly and are always ready to help.

Academic courses relevant to the project: Analog Digital and VLSI Design, Digital Design, Computer Architecture.

Name: Monil Shah (2014A3PS0388H)

Student Write-up

Short Summary of work done during PS-II: Work involved updating regression scripts for faster and efficient automation, debugging Bugs to categorize as RTL / TB bugs and making appropriate fixes, writing scripts to be flow flushed on FPGA that will be used during power on of silicon, maintaining Integrations and branching of development trees

Tools used (Development tools - H/w, S/w): System Verilog, Linux, Perl, Shell

Objectives of the project: Overall Verification and Infrastructure development

Outcomes of the project: Faster and efficient regression flow , increased passing rate of regressions

Major Learning Outcomes: Significant and in-depth understanding of PCIe , Verification methodology

Brief Description of working environment, expectations from the company: Work culture is simply amazing , with opportunity to learn significant things enhanced due to hands-on experience . Team members are always helpful and are always keen in encouraging doubts and guiding. Expectations from company is to get the work done within the time frame by encouraging users own choice of comfort zone in terms of workspace

Academic courses relevant to the project: Computer Architecture , Digital Design , Microprocessors

Name: Somesh Nawandar (2014AAPS0318H)

Student Write-up

Short Summary of work done during PS-II: Wrote multiple scripts to automate internal flows and wrote directed test cases using universal verification methodology to verify whether the design is fulfilling specification requirements

Tools used (Development tools - H/w, S/w): Unix systems, shell and Perl , System Verilog

Objectives of the project: Automated flows and spec verification.

Outcomes of the project: Create Automated flows and verified specification requirement for design specification.

Major Learning Outcomes: Learnt System Verilog and Universal Verification Methodology

Brief Description of working environment, expectations from the company: The working Environment was very productive and supportive. I was always mentored about how to do things and was always given significant work that would add value to the company.

Academic courses relevant to the project: Digital Design, Computer Architecture

Name: Pochana Santhosh Kumar Reddy (2013B2A30887H)

Student Write-up

Short Summary of work done during PS-II: Developing the tool by adding functionalities and preparing the external version of the tool.

Tools used (Development tools - H/w, S/w): Visual studio

Objectives of the project: Bringup of the SoC

Outcomes of the project: Tool which is used to test the SoC.

Major Learning Outcomes: Perl,python and debugging skills

Brief Description of working environment, expectations from the company: Working environment is good. You feel excited such that you are in live projects as an intern and also the mentors are so supportive here.

Academic courses relevant to the project: OOPS

Name: Dhruv Garg (2014A3PS0350H)

Student Write-up

Short Summary of work done during PS-II: Worked on improvement of flow in Tegra Projects particularly in reducing the migration effort for migrating projects.

Tools used (Development tools - H/w, S/w): Perl, Python, Perforce, Shell Programming, Unix

Objectives of the project: To Reduce Migration Effort in Tegra Project Tree

Outcomes of the project: Reduced Effort from ~6-7 weeks to ~1 week

Major Learning Outcomes: Learned Perl and Python Scripting. Learned Debugging. Learned about Perforce.

Brief Description of working environment, expectations from the company: Nvidia Graphics is one of the best places to intern. You get exposure to live projects under the guidance and support of expert

managers and mentors. The work environment is not so rigid and it fosters innovation, collaboration and work satisfaction. The company has an open environment and lacks a very rigid hierarchical structure compared to other firms in the industry. Also, it is a fast growing company where learning opportunities are abundant. This is what we expected when we first came to Nvidia, and surely all expectations were met and much more. The experience was pivotal in helping me decide my future course of action

Name: Shubhankar Pawade (2014A8PS0505G)

Student Write-up

Short Summary of work done during PS-II: Worked in Fullchip Verification team on debug failures and improvements in testbench. Understood the basic working of GPU and its units during the training period, moreover learnt the application of tools and scripts specific to my team. Simultaneously, also worked on debug failures which proved to be an essential factor in understanding the specifics of various units. Apart from debug, I was given two tasks - one, to implement an audio controller transactor and second, to build a reset checker.

Tools used (Development tools - H/w, S/w): Verdi, Siloti

Objectives of the project: Failure debug and testbench improvements.

Outcomes of the project: Implemented an audio controller transactor and built reset checker.

Major Learning Outcomes: Understanding of GPU architecture and experience of using verilog and perl to implement the tasks.

Brief Description of working environment, expectations from the company: It was a great learning experience as I had an opportunity to interact with the brightest minds in this field. Everyone in the company is very helpful and working with them motivates you to work harder. Expectation from the company is to try your best to complete the tasks assigned to you and also, having strong basics in your field will add points to it.

Academic courses relevant to the project: Computer Architecture, Digital Design

Name: Shashwat Gupta (2014A8PS0397G)

Student Write-up

Short Summary of work done during PS-II: During my Practice School II, I got the opportunity to work for the DFT-CAD team in the DFT department. Being a single degree undergraduate student, the concept of test and testability was very new to me. Initially, I had to struggle with the concepts and learned through NPTEL lectures pointed to me by my mentors. During the first two weeks, I learnt TCL (Tool Command Language) and regular expressions and got familiar with the terminologies used by the team. I guess, perl/tcl/python and C/C++ are the languages used across all electronics companies apart from Cadence/Synopsys tools. System Verilog is also used by my team but since it is a high level derivative of our Verilog HDL, it was easier to pick up. My team develops the code and verification scenarios to test the chips built by NVIDIA using derivatives of existing test architectures. The first work assigned to me was writing test cases for a clock spec (a specification defined by the team to test clock paths) and see whether the code for the same is accurately written or not. One of the major projects I was added to was the new stepwise flow wherein the legacy production flow is being replaced by the stepwise flow. As the name suggests, the existing flow has been broken into steps to ease debugging and add the owners of the concerned APIs to rectify the errors. The latest work I did was to automate certain existing flows. This automated flow triggered two parallel regressions in the production and stepwise scenarios and compare the files at the end of it. During the internship, I gained linux, shell scripting skills which I didn't have a practice of prior to coming here. The culture at NVIDIA is great - I have religiously played football with my team every Wednesday, we have gone for two outings till now (given the time crunch), I have learnt Table Tennis here at NVIDIA. Peer mentorship, exposure to work happening in other teams of NVIDIA, learning new stuff like Deep Learning are some of my observations why NVIDIA is a great place to work at.

Tools used (Development tools - H/w, S/w): Tcl, system verilog, C++

Objectives of the project: Development of Code and Verification cases for Test Scenarios

Outcomes of the project: Bug free code and better test coverage

Major Learning Outcomes: DFT concepts, shell scripting, regex, tcl, corporate culture

Brief Description of working environment, expectations from the company: NVIDIA's culture is great in terms of lenience and work ethics. There are flexible deadlines and proper mentorship is provided when

you're stuck somewhere. Everybody in the team acts as a mentor as and when required. Personally, I would have been happier if I had got something to do with Static Time Analysis or GPU/Denver Architecture, but I leave the company with no regrets as the entire internship has been an enjoyable learning experience at each step. I would probably have not been as happy as I have been in this team because of welcoming and helping team members. Transport facility provided by the company is great, however, a few drivers are superlatively indignant and are incorrigible. They have cabs from almost everywhere and in case, you need to go someplace else for a particular day(s), you can do so. In case, you plan to work till late in the office, you can do so as the office remains open all throughout (just the ACs stop functioning post 6 PM). There are cabs at regular intervals after 5/6 PM as well to board which, you need to inform the reception/security a few hours in advance. Food is great - you get everything from salads and fruits to biryani. There are several interest groups within BDC - you can freely join any of those and pursue your interests like Badminton, Machine Learning, Running, Cycling, etc. There's a pantry on each floor and is well stocked. In all, NVIDIA is probably one of the best electronics companies to work at.

Academic courses relevant to the project: VLSI Test and Testability, Digital Design

Name: Manasa Garlapati (2014AAPS0214H)

Student Write-up

Short Summary of work done during PS-II: Formal verification is a verification technique that is used to check correctness of an algorithm. Semiformal verification technique helps to reduce verification effort in many ways. Sequential Equivalence Checking (SEC) is a way that formal verification tools use to check functional equivalence of golden design with your design. Clock domain crossing is done to ensure that data is properly transferred between clock domains; various issues faced are discussed and solutions are explained. Clock Gating is most powerful technique for power saving. My work involves application of SEC verification tools, Clock domain crossing and Clock Gating in GPU pipeline.

Tools used (Development tools - H/w, S/w): Verdi, JasperGold, perl, tcl, verilog, c++

Objectives of the project: Develop an efficient testbench, save power by introducing clock gating in new setups and improving it in existing setups. Learn debugging errors at Verilog levels with the help of various verification tools

Outcomes of the project: Exposure to various verification tools and understand about the work culture inside the industry .Try to build the gap between academics and industry.

Major Learning Outcomes: Industry experience

Brief Description of working environment, expectations from the company: For me, completing the PS II internship was very rewarding. It was the most educational experience of my degree as it gave me the opportunity to step outside of the classroom and transition directly into the workforce. It took everything I had learned throughout my University experience and applied it. After just a few weeks I, began to decipher which of my skills were most practical in the 'real world' and which ones I needed to develop further. The PS II program itself is something that requires dedication and time management. The internship adds truth to the idea that professionalism and knowledge is the key to success and that you need to take any opportunity that is offered to you to further enhance your career. Favorite part of my internship was being immersed in an environment where I was surrounded by so many great people in VLSI industry. Intern life can be difficult and you only have a short time to make a lasting impression. But an internship is a great opportunity to gain hands-on experience, develop deep relationships and set yourself up for a rewarding career.

Academic courses relevant to the project: Computer architecture, Analog and digital VLSI design, Digital Design, Microprocessors.

Name: Bharat Kabra (2014A8PS0300H)

Student Write-up

Short Summary of work done during PS-II: Given a GPU workload or a test, we are often interested in finding other tests that are most similar to it. For example, if there's a bug in an application, we would like to know what kind of directed tests would be most suited to reproduce the issue.

As chip size increases, performance is expected to scale linearly. We would like to find Performance monitors showing very strong inverse correlation with scaling.

Tools used (Development tools - H/w, S/w): Python, Linux/Unix

Objectives of the project: 1) Finding similar workloads, 2) Determining anomalous Performance Monitors 3) Clustering of Workloads

Outcomes of the project: I was able to develop a working tool which could find the most similar workloads to a given input test. I also developed a workflow to get the worst performing Performance Monitors which were to be debugged, and finally using clustering algorithms found accurate groupings of similar workloads from a given database.

Major Learning Outcomes: Gained proficiency in working with Python and learnt a lot about the very strong support for data visualization it has. Using various libraries for applied statistics and machine learning for data analysis expanded my view of what's possible.

Brief Description of working environment, expectations from the company: Nvidia is one of the best places for an intern to work at. The culture is very welcoming and one gets to work on a lot of live projects. There are no strict rules and you are given a lot of freedom. The company expects you to ask for help when stuck. It would be better if people know at least one scripting language before coming. Also, the lunch and snacks is free and you get free transportation. You get to have many team outings during your stay here. Overall it is an amazing experience.

Academic courses relevant to the project: Machine Learning, Computer Architecture, Linear Algebra, Probability and Statistics, C programming, Object Oriented Programming.

Name: Mandapati S V N S B Sowmya (2014AAPS0336H)

Student Write-up

Short Summary of work done during PS-II: Project Title: Virtual Prototyping for System On Chips

Description: Learnt SystemC, TLM(Transaction Level Modelling) 2.0, Concepts of Object Oriented Programming like Abstraction, Interfaces, Data Encapsulation and Polymorphism. Reproduced and Debugged Various Bugs related to a unit of the SOC(System On Chip). Also, Contributed to the Debugging of regression tests of the same unit and increased pass percentage from 64.89% to 77.527%. Successfully contributed to closing of Task tracking Bug of two clusters of SOC and also Made connections to dangled interrupt pins of one of the clusters. Understood the Architecture and interconnectivity of IP™s on-chip which helped in the progress of the project for debugging various

issues. Learnt various Debugging techniques like using gdb(GNU Debugger) and CSL logs. VDK Patching, Releasing and Auto-Releasing. Understood the importance of SCVE (SystemC Validation Environment) and ran some basic tests.

Tools used (Development tools - H/w, S/w): 1. PuTTY (terminal emulator), Perforce (revision control system) and LSF (Large Storage Farm), which are some basic tools that enable, efficient work implementation and file management.

2. Unix Shell scripting and GVIM editor.

3. A SoC verification and debug platform called Gnu Debugger (gdb)

4. Programming languages such as C++, SystemC and TLM-2.0

5. Verdi, VDK(Virtual Development Kit)

Objectives of the project: The project aims in understanding SystemC and TLM models of various IP's present in SOC(System on Chip), Understand their inter-connectivity and Debugging various issues related to them.

Outcomes of the project: The knowledge on Concepts such as Memory mapped IO, Port Mapped IO, Direct Memory Access learnt in Microprocessors and Microcontrollers also the Concepts like In-order execution, Out of order Execution, Speculative Execution, Dynamic Scheduling learnt in Computer Architecture and Digital design are useful and emphasized and command over these topics is of great use in understanding how the CPU initializes and interacts with the SoC. An overview of Object Oriented Programming concepts like Inheritance, Polymorphism, Abstraction, Virtual Functions, Dynamic Memory, Templates, Preprocessors, Conditional Compilation can provide an overview on limitations and challenges faced while prototyping the SoC using SystemC. As the project deals with models for System-on-chip, a basic understanding of multiple IP modules and their functionalities, was required. A brief knowledge of Architecture and interconnectivity of IP™s on-chip helped in the progress of the project. An understanding of communication protocols used by various modules on the chip to pass control and access data was essential. Got a command on SystemC, Perforce, Shell Scripting.

Major Learning Outcomes: Understood the importance of Virtual Prototyping and it's role in reducing the Chip design cycle. Learnt C++, Concepts of Object Oriented Programming, SystemC, TLM(Transaction

Level Modelling) 2.0, Debugging Techniques, Command on Shell Scripting and Perforce which is Version Control System.

Brief Description of working environment, expectations from the company: A strong company culture can contribute to improved employee communication, collaboration, wellness and performance. NVIDIA has got great work Environment and work Culture. The team members were very supportive and helped me gain technical knowledge and also helped me out whenever I needed any support related to the project work and took time to clear my doubts.

Academic courses relevant to the project: Digital Design, Micro Processors, Computer Architecture, C Programming

Name: B. Likhitha (2013B4AA0855H)

Student Write-up

Short Summary of work done during PS-II: I have worked on the unit level verification of GPU. My work is mostly associated with automated verification. I had to write scripts to generate testpoints and then launch multiple tests on these testpoints to find whether they are valid or not. I worked mostly in the areas of Gate level simulations and coverage. I had to report to my team the outcome of these tests on a weekly basis and had to debug some of the errors.

Tools used (Development tools - H/w, S/w): I had worked with verdi , a tool developed by Synopsis to debug the errors.It's features enable observing the signals of different components in a circuit and makes debugging easier. I have worked majorly with perl scripting language and shell programming.

Objectives of the project: To get familiar with concepts of Automated testing.To gain deeper knowledge about the functioning of circuits and to practically apply the theoretical knowledge gained in college by working on live projects.

Outcomes of the project: I have gained experience in working with live projects and handling the deadlines. I had the opportunity to improve my technical knowledge and coding skills.

Major Learning Outcomes: I have gained experience in working with live projects and handling the deadlines. I had the opportunity to improve my technical knowledge and coding skills. Good hands on experience with shell programming and perl scripting.

Brief Description of working environment, expectations from the company: The work culture at Nvidia is good. Deadlines will be flexible. The company expects us to have a basic knowledge related to the projects that we will be working on. Weekly meetings encourage us to get acquainted with other team members and to learn new concepts.

Academic courses relevant to the project: Digital Design, Computer Architecture, C programming

Name: Samavedam Manikhanta Praphul (2014A3PS0306P)

Student Write-up

Short Summary of work done during PS-II: Validation of various features of the CPU like reliability, achieveability and serviceability of the architecture designed and implementation defined values in the architecture. Validation of them required a lot of test generation and verifying them on simulator, emulator and field programmable array (FPGA).

Tools used (Development tools - H/w, S/w): Simulator (name confidential), Emulator (name confidential), External debugger (name confidential), Field Programmable Gate Array (FPGA)

Objectives of the project: Validation of ARM v8.x features

Outcomes of the project: Writing bare-metal tests for validating features and testing them on various tools. Debugging various bugs.

Major Learning Outcomes: Hands-on experience about testing features on simulator, emulator and field programmable gate array (FPGA). Debugging of various bugs. Debugging using external debugger for testing on FPGA.

Brief Description of working environment, expectations from the company: The working environment was remarkable. Ample amount of time was provided to understand the work. There were continuous talks on various tools used here and were encouraging me to learn by performing experiments in whatever task that I am assigned with. The team was encouraging me to solve the issues at my own

pace and only after proper understanding of what needs to be done. Understanding the issues that would be faced by an intern like us, and providing solutions like initial 14 day's stay, to and fro journey reimbursement, afternoon lunch, everyday travel facility shows how much concern the company has it towards its interns.

Academic courses relevant to the project: C-programming, Computer architecture.

PS-II Station: Nvidia Graphics -Software, Bangalore

Faculty

Name: Swapna Kulkarni

Comments: Expectations from industry: The Hardware division of NVIDIA Graphics, Bengaluru deals with architecture, design, development and verification work related to GPUs and SoCs of NVIDIA. The work requires expertise in Digital Design, VLSI Design, Architecture Modelling of chips, Synthesis, Low Power Design, Circuit Design and Place and Route of complex VLSI chips. A large chunk of the work at each stage of the Chip involve Verification and Validation. Since the complexity is very large, entire design and verification process require a lot of automation. Hence such a work demands expertise in various scripting languages like Unix Shell Scripting, Perl, Python and Tcl/Tk. Programming languages like Verilog, System Verilog, System C and C++ are necessary for design and verification of such complex circuits. Knowledge of Computer Architecture is essential for working in NVIDIA chips. Of course it is known that the interns may not have expertise in all of the mentioned topics. But it is expected that the interns should be fairly good in on Digital Design, Computer Architecture, Microprocessors, Verilog, Unix Shell Scripting, C++ etc. Knowledge on Python, Perl, Tcl/Tk, System Verilog, System C, Low Power VLSI design will definitely reduce the ramp-up time. Moreover enthusiasm to learn, faster ramp-up, proactiveness, a positive attitude are must have qualities required for the industry. NVIDIA Authorities are quite helpful supportive in integrating the student interns into the mainstream activities. The interns work on live projects of NVIDIA and they often interact with the teams located across globe. Indeed it is a great opportunity for an intern to work in NVIDIA Bengaluru (both Hardware and Software divisions).

Student

Name: Khushal Bansal (2014A8PS0313P)

Student Write-up

Short Summary of work done during PS-II: My project was about addition of tests in regression testing infrastructure. This infrastructure downloads the nightly PDK build and runs tests. The project involved addition of tests like the setup and execution of GCC and Glibc test suites and the test for comparing file systems between two PDK releases .Apart from this I worked on reorganization of SSTI(testing infrastructure) and triaging and debugging issues related to toolchains.

Tools used (Development tools - H/w, S/w): Jenkins

Objectives of the project: Development and maintenance of regression testing infrastructure

Outcomes of the project: Different tests were added to the regression testing infrastructure which involved making a filesystem checker and capability of testing the toolchain with specific tests.

Major Learning Outcomes: Had a good experience working with toolchains and cross-compilers. Learnt Shell scripting, git. Team work taught to write cleaner codes with documentation.

Brief Description of working environment, expectations from the company: It has been a great experience working at NVIDIA Graphics in system software team. Working environment is really nice where everyone is willing to help when approached. Weekly meetings with manager ensured that tasks are being tracked and input is being taken from us also. It is expected to give the interns a break for like a month to understand things. And NVIDIA does it just right. You can move at your own pace initially and then go on. Overall it was a great experience here which helped not only in software development skills, but also in soft skills.

Academic courses relevant to the project: Embedded linux

Name: Karansinha Patil (2014A3PS0252P)

Student Write-up

Short Summary of work done during PS-II: Worked on the autonomous driving SDK (DriveWorks). Studied Robot Operating System (ROS) and an open-source industry standard driving platform (Autoware). Comparisons were made of DriveWorks and Autoware and recommendations were given for optimal feature configurations. Installation on various processor architectures while maintaining dependency constraints. Devised a message format for visualization of HEVC video in ROS's inbuilt graphics viewer, Rviz.

Tools used (Development tools - H/w, S/w): Shell scripting, Python/C++ programming, Autoware, Nvidia Proprietary tools

Objectives of the project: To implement features from Autoware on Nvidia's Autonomous Drive Platform

Outcomes of the project: Managed to provide clear recommendations and implement various configurations of Autoware on the Tegra SoC. Improved understanding of ROS and Autoware by performing GPU profiling as well.

Major Learning Outcomes: Learnt about Robot Operating System, Autoware and the techniques of self-driving cars in great detail. Increased knowledge of the use of abstract algorithms in real-world applications.

Brief Description of working environment, expectations from the company: Work environment very comfortable, standard five-day work week, 40 hours. All necessary requirements were met with respect to workspace, tools, equipment and peripherals. Completion of the project is essential, but ample time is given for the same. Work being done in tandem with full-time employees and real-time projects are given to work upon.

Academic courses relevant to the project: DSA, Machine Learning

Name: Rohith Chunduri (2014AAPS0306H)

Student Write-up

Short Summary of work done during PS-II: The work I done was developed an automated test tool across software updates. The tool was designed in order to test in a power fail safe environment. The

tool was part of functional and stress testing to make sure that system is able to boot by triggering power failure while updating or upgrading. The complete process is automated. So in this process how bootloader works, loads firmwares and boot partitions and deployment of Software Updates was focused. The tool was automated with the use of automation server Jenkins.

Tools used (Development tools - H/w, S/w): C, Linux , Gnu Make, GDB, Valgrind and Jenkins

Objectives of the project: Developing an automated test tool for software updates in a power fail safe environment.

Outcomes of the project: Test Cases for added for the tool , the tool if terminates and then executed again starts from the last state it has terminated . Reports the appropriate logs and errors for a particular test case. The test tool is automated which greatly reduces the time of the user.

Major Learning Outcomes: Learnt about linux tools , linux system programming , GNU make, GNU debugger, Valgrind etc and introduced to the field embedded linux systems in general. Learnt about how software development happens and standards used in software implementation.

Brief Description of working environment, expectations from the company: NVIDIA has a really supportive working environment, wherein everyone has been helpful whenever I have approached them. We, as interns, have been treated well and were asked for opinions and feedbacks on the project regularly. In terms of expectations, the tasks assigned have been challenging and enjoyable to do. Overall it has been a productive period for me in terms of learning on the technical side of things, as well as in learning how to behave in a professional environment.

Academic courses relevant to the project: Embedded System Design, Operating Systems, Computer Architecture, C programming and Data Structures and Algorithms.

Name: Amullya Shruthi T (2014AAPS0218H)

Student Write-up

Short Summary of work done during PS-II: Had to work on an audio related device driver on a virtualization layer. Main works did include adding support for features of various hardware accelerator modules

Tools used (Development tools - H/w, S/w): C, Linux, VectorCAST

Objectives of the project: Adding features in audio server

Outcomes of the project: Adding support for narrowband/ wideband call, support for volume control, code coverage

Major Learning Outcomes: Operating systems, C and Linux commands

Brief Description of working environment, expectations from the company: The work culture is really good. The environment is very open and friendly and has many Bitsians, hence it's easier to gel with. All the managers are friendly and approachable. The deadlines are flexible.

Academic courses relevant to the project: Digital Signal Processing, C, OS, Computer Architecture.

Name: Shubhi Garg (2013B5A30761P)

Student Write-up

Short Summary of work done during PS-II: My first task was to find out the interaction between X Driver and Kernel. It involved thorough documentation for various use-cases like booting, shutdown, HDMI hot plug, unplug, suspend, resume etc. The documentation describes various NVDC calls getting called in a sequence and for a particular NVDC call, the corresponding IOCTLs that are coming up. Overall, the impact of this task was to make debugging feasible in case of any issues.

My second task was to automate L4T Low Level Display tests for Display Controllers. I have written shell scripts to automate the following use cases:

- i) Verify Virtual Terminal Switching from fbconsole and X
- ii) Xorg/fbconsole Handover to verify fbconsole's mode
- iii) Verify Mode switching through X/IMP verification
- iv) DPMS Verification

Tools used (Development tools - H/w, S/w): Bash Shell Scripting, Git

Objectives of the project: The objectives of the project were to document X Driver and Kernel interaction and adding tests to verify display functionalities.

Outcomes of the project: Documentation is completed. Scripts are verified by the mentor. It will be added in the test framework along with other tests once other reviewers review them.

Major Learning Outcomes: Learned Kernel functionalities and interaction with user space, writing Shell Scripts in an efficient way.

Brief Description of working environment, expectations from the company: I have learned a lot from Nvidia. I feel proud that I got a chance to work here with such an amazing people who were always ready to help in any area. I have gained so much of knowledge in the past few months and enjoyed working with the team assigned to me. I have learned how to work professionally. I liked the work environment as it is highly supportive and stress free. I did not take time to adjust here and work. My manager is so supportive. I can freely talk to him and share my views. He made me feel free to choose the project I wanted to work on. That's why I have worked on different things and thus learned a lot. It has fulfilled all my expectations. I am very thankful to Nvidia.

Academic courses relevant to the project: Operating Systems

Name: Adarsh Kumar Sadhukha (2014A3PS0250P)

Student Write-up

Short Summary of work done during PS-II: The main objective of the project was to design the UI and API for Probe. Probe is an application used to display information about various build related entities, such as Configurations, Tasks Job Specifications, and their inter-dependencies, to the user. Probe uses Configuration Parser APIs and requests for information, processes and reorganizes it into the format that users seek and displays it. The UI was made using wxWidgets toolkit, whereas, the API was built using Perl and Moose.

Tools used (Development tools - H/w, S/w): wxWidgets toolkit, wxFormBuilder application, d3.js libraries for data visualizations.

Objectives of the project: The objective of the project was to develop the UI and API for Probe. Probe would make it easier, faster and more convenient for hardware engineers to debug hardware trees, see their current state and see all the attributes and inter-dependencies of the entities of the build system.

Outcomes of the project: Probe has already been completed and is being used. It has had two releases within NVIDIA and I am currently working on adding other features which have been requested by the users.

Major Learning Outcomes: Learned Perl, Moose, wxPerl and wxWidgets, learned GUI app development, and better programming norms (thanks to my mentor).

Brief Description of working environment, expectations from the company: NVIDIA has been a great place for me to learn. Honestly, I've learnt a lot in the past few months and really enjoyed working on the project assigned to me. Moreover, the work atmosphere is highly supportive and constructive. On one hand, there's always help available when one's stuck, on the other, there is no spoon feeding, so one really has to work it out and figure out what to do, and how to do it, which I find is something that resonated with how I work. All in all, my only goals from this internship were to learn as much as I can, and have a taste of the professional world, both of which have now been ticked.

Academic courses relevant to the project: Object Oriented Programming, Data Structures and Algorithms, Operating Systems

Name: Shiva Tripathi (2014A3PS0401H)

Student Write-up

Short Summary of work done during PS-II: Worked on GPU unit tests, which involved porting them to QNX and modifying the code to add certain extra controls like iterations, cache attribute etc. From this learnt about the GPU architecture and various related concepts. Other main task was related to display. It involved working on with HDMI drivers and making relevant changes so that 4k display is supported on one of the tegra platforms. Got to know about HDMI, EDID, DSI, display properties and related concepts.

Tools used (Development tools - H/w, S/w): Git, perforce, other nvidia specific tools

Objectives of the project: Modification of GPU unit tests and support of 4k display on one of the tegra platforms

Outcomes of the project: Was able to complete the tasks assigned in the time interval.

Major Learning Outcomes: Operating system concepts like system calls, computer architecture based memory techniques, apart from them knowledge gained related to concept of makefiles, HDMI, EDID, drivers, device tree etc.

Brief Description of working environment, expectations from the company: Working environment is good , full of learning opportunities.

Academic courses relevant to the project: Operating system, computer architecture, C programming

Name: Garvit Agrawal (2014A3PS0268P)

Student Write-up

Short Summary of work done during PS-II: Fixed many bugs related to RM team, modules under this team consists of GPU, memory, display, host1x. Removed hardcoding from Display drivers using device tree data structure. Enabled/disabled gpu unit subtests from RM native tests. Fixed some memory leak bugs. Ported codes from one branch to another which contributes in the unification of both the branches which is aimed for future use.

Tools used (Development tools - H/w, S/w): Perforce, git

Objectives of the project: Fixing bugs and DT'fication

Outcomes of the project: Successfully removed hard codings from HDMI display drivers and fixed several other bugs.

Major Learning Outcomes: Linux Kernel Programming, Multithreading, memory management, operating systems, process synchronization.

Brief Description of working environment, expectations from the company: Working environment is quite healthy. Everyone is friendly and helpful and encourage you to work on your shortcomings.

Timings are flexible. They just expect you to complete your work on time and gain something valuable while working on something.

Academic courses relevant to the project: OS, C Programming, Computer Architecture

Name: SREENIKETH H (2013B5A30695P)

Student Write-up

Short Summary of work done during PS-II: Work was done on developing an automated test infrastructure which will help in catching bugs at a much earlier stage. Bug fixes were done in the existing infrastructure and numerous features were added to improve reliability and efficiency. A new port was added to the infrastructure to aid developers to test their code changes locally before getting it merged, which will help with the new chip bringup. Work was also done in getting a unified PDK for the next release onwards. Effort was put in to minimize effort for customers/developers to use the same PDK for working with multiple processors.

Tools used (Development tools - H/w, S/w): Jenkins

Objectives of the project: Developing an automated test infrastructure

Outcomes of the project: The infrastructure was developed and a new port was added for developers to test directly from code repository. Helped in developing a unified PDK

Major Learning Outcomes: Learnt Python and shell scripting, got a flavor of embedded systems in general.

Brief Description of working environment, expectations from the company: NVIDIA has a really supportive working environment, wherein everyone has been helpful whenever I have approached them. We, as interns, have been treated well and were asked for opinions and feedbacks on the project regularly. In terms of expectations, the tasks assigned have been challenging and enjoyable to do. But whenever we get stuck, the managers do sit with us and help us figure out what we've been doing wrong. Overall it has been a productive period for me in terms of learning on the technical side of things, as well as in learning how to behave in a professional environment.

Academic courses relevant to the project: Operating systems, Data Structures and Algorithms

Name: G.Ashwin (2014B4PS0960P)

Student Write-up

Short Summary of work done during PS-II: Working as an intern at Nvidia has been a wonderful experience for me. I have been working here for the last five months in the Automotive Software team. In the initial few weeks I got to learn and get accustomed to the work environment and developed my software skills required for the internship. I got to understand the concept of camera calibration which helps in reconstruction of the world model with minimal error. This is very important because when these cameras are put into use in a self driving car, reconstructing world objects with utmost accuracy is needed for safety reasons. I got to work with certain open source libraries like Ceres, Eigen, LAPACK which have been used with C++ and one of my tasks was to replace these open source libraries with CUDA libraries for carrying out computations on GPU. The tasks assigned to me gave me a practical experience on the live projects and as a result I got to learn a lot more about the team's job. I also analyzed certain auto-calibration algorithms for efficiency in order to find out which ones would help my team's cause. All this work has helped me improve my skills in C programming, Linux Shell Scripting along with an understanding of GIT and CUDA. The work experience gained from working here at Nvidia has certainly broadened my skill set making me better equipped to fit into work life.

Tools used (Development tools - H/w, S/w): Ceres, cuSolver, CUDA, C++

Objectives of the project: To understand implementation of Camera calibration, use of ceres library in the code for camera calibration, replace ceres library functions with cuSolver functions

Outcomes of the project: Knowledge gained about camera calibration, Autocalibration algorithms analyzed, role of ceres library observed, ceres library functions replaced with CUDA libraries

Major Learning Outcomes: I was able to understand the concept of camera calibration, how it is important and how can it be implemented. Autocalibration was studied and the difference between calibration and autocalibration algorithms became clear. Effect of multiple transformations including world to camera, camera to rig, rig to world were understood. Use of ceres library in the calibration code was documented and certain open source functions were replaced with CUDA libraries

Brief Description of working environment, expectations from the company: This internship has helped me develop an interest in automotive software. I would like to explore this field and learn more regarding the same. The team has always helped me out whenever I had any issue or whenever I got stuck anywhere. I have been able to interact freely with all members of my team anytime I wanted to discuss something. Not just the team, all the employees were very helpful, and that has made the experience in NVIDIA a pretty enjoyable one. I have learnt a lot in this short period of time because I have been given good work which has helped me hone my programming skills. The one thing that I have certainly learned during my internship here is the way to mingle with the team to get work done. As an intern, I am glad that I was given good work just like any other employee would get. The internship has played a major role in preparing me for work in the future.

Academic courses relevant to the project: C Programming, Object Oriented Programming

Name: Potharaju Ravi Teja (2014AAPS0268H)

Student Write-up

Short Summary of work done during PS-II: I have worked on Flashing tools and Update tools. Also, I have worked on Test Automation in the initial days of my internship.

Tools used (Development tools - H/w, S/w): Automation tools, Internal tools S/W

Objectives of the project: Knowledge transfer, Bug fixing, Test Automation

Outcomes of the project: Bugs fixed, Tests Automated

Major Learning Outcomes: Boot Flow and Flashing Flow

Brief Description of working environment, expectations from the company: Working environment is very comforting. Team members, mentor, manager are very helpful and easy to approach.

Academic courses relevant to the project: Operating System, C language

Name: Tejeshwar Reddy Gurram (2014A8PS0492H)

Student Write-up

Short Summary of work done during PS-II: Automated Testing Framework for multimedia test apps

Tools used (Development tools - H/w, S/w): Jenkins

Objectives of the project: Testing

Outcomes of the project: Test Automation Server

Major Learning Outcomes: Shell Scripting

Brief Description of working environment, expectations from the company: The working environment was great. My learning was at an exponential rate. All credits to my team. My team members are very helpful and i learned a lot from them. I think i have contributed something significant to the company.

*PS-II Station: Robert Bosch Center for Cyber Physical Systems,
Bangalore*

Student

Name: Lalit Shah (2014A3PS0225G)

Student Write-up

Short Summary of work done during PS-II: Worked on 2 different projects. First was state machine for a streetlight. Second one was mmwave radar for localisation of drones

Tools used (Development tools - H/w, S/w): Code Composer Studio, Arduino, Matlab

Objectives of the project: Localisation of flying drone using millimetre wave radar

Outcomes of the project: Azimuth Heat map plotted in almost real-time

Major Learning Outcomes: Python libraries, mmwave algorithms, code composer

Brief Description of working environment, expectations from the company: I have really developed as an engineer while working here. I tried many things to achieve my daily objectives and in the process, learnt about problem solving from a completely different perspective

Academic courses relevant to the project: Digital Signal processing, Computer science, signals and systems

Name: Shrikant Sushil Sharda (2014A7PS0046P)

Student Write-up

Short Summary of work done during PS-II: 1. Catalogue Server: Implemented a NodeJS server that stores details of devices connected to the middleware like format of data being streamed, device location, owner, provider etc. The server stores certain schemas against which each device entry being posted to the server is validated so that each entry is present in the requisite format. This makes it very easy for third party developers who have access to the device details to request the database in a uniform manner. Also, the server provides basic LDAP authentication so that any user altering the

database can do so only when they have authorisation. Further, the server also has a basic AngularJS app that displays some graphical data like number and types of devices etc.

2. Web Application: The web application developed queries the catalogue for a particular item and then displays live stream data being received from the middleware. It also displays the pin point location of the device on a strip of google maps.

Tools used (Development tools - H/w, S/w): NodeJS, AngularJS, D3js, AJV validator, LDAPjs, amqplib

Objectives of the project: Implement a Catalogue Server for the Middleware being developed under the Smart Cities Project. Develop demonstrable applications to show the working the the Middleware APIs

Outcomes of the project: Integrated all the components of a Middleware and demonstrated it using various sample applications

Major Learning Outcomes: I further improved upon my knowledge in NodeJS and AngularJS and gained deep insights into the intricate functioning of Web Servers and RESTful APIs

Brief Description of working environment, expectations from the company: The working environment is very flexible and we have the freedom to try out various technologies towards achieving a certain end. As interns, we are part of the weekly review meets where the entire team sits down and reviews the current status and charts out plans for further development. All team members are very approachable and willingly help the interns in any issues we may be facing. Being a research centre, the staff here is highly experienced and knowledgable and seniors can provide helpful insights in our projects. One can expect to be in the midst of some of the best minds in Cyber Physical Systems in the country and a very research oriented work outlook.

Academic courses relevant to the project: Computer Networking, Human Computer Interaction, Computer Programming

PS-II Station: Sokrati Technologies Pvt. Ltd., Pune

Student

Name: Samariddhi Chandak (2014B4PS0467G)

Student Write-up

Short Summary of work done during PS-II: Digital Marketing Audit and Plan

Objectives of the project: Audit and Plan

Outcomes of the project: Helping Business Development Team

Major Learning Outcomes: Digital Marketing

Brief Description of working environment, expectations from the company: Helpful, friendly

Name: Ayush Rathore (2014A5PS0283P)

Student Write-up

Short Summary of work done during PS-II: Work involved in both domain of Business Development And Business Analyst, As BD intern, I connected with many marketing head of various companies to discuss the boost Digital marketing can provide to their business, As BA I worked on various client, launched campaign of ads on Fb, Instagram etc. Optimized the accounts to give the best results.

Tools used (Development tools - H/w, S/w): Excel, Google Analytics, AppsFlyer, Pipedrive

Objectives of the project: Understanding Of Digital Marketing using Facebook

Outcomes of the project: The dependency of Companies to promote their product they need social media as it's the most influential thing currently and has a highest successful reach to audience.

Major Learning Outcomes: Importance of Digital Marketing

Brief Description of working environment, expectations from the company: Nice Culture

PS-II Station: Texas Instruments (I) Pvt. Ltd. -Analog, Bangalore

Student

Name: Aryan Singh (2013B4A30581G)

Student Write-up

Short Summary of work done during PS-II: Designing of Test Setup for PSRR and Boards for CI,Cap Measurement

Tools used (Development tools - H/w, S/w): Labview, Testand,Cadence

Objectives of the project: Improvement of Measurement of Parameters of Mux

Outcomes of the project: Improved Measurement setups for the parameters

Major Learning Outcomes: Technical knowledge of analog and Problem Solving

Brief Description of working environment, expectations from the company: Nice Environment. No Boundation and Full Freedom.

Academic courses relevant to the project: Analog Electronics,ADVD

Name: Soham Kelkar (2014A3PS0266G)

Student Write-up

Short Summary of work done during PS-II: I worked with the Voltage References and Supervisors team where my work was focused on the validation of Next Generation Precision Bandgap References.

Tools used (Development tools - H/w, S/w): NI LabVIEW, NI TestStand, Cadence Allegro

Objectives of the project: Development of a Time Optimized Automation

Outcomes of the project: Reduction of Time by 99.7%

Major Learning Outcomes: Automation Development, Validation Process and Algorithms

Details of papers/patents: Co-author, Development of a Time Optimized Automation for Curvature Code Calculation

Brief Description of working environment, expectations from the company: The work environment was very intern-friendly and was conducive to learning and innovation.

Academic courses relevant to the project: Analog and Digital VLSI Design, Analog Electronics

Name: Anand Dugad (2014A3PS0278G)

Student Write-up

Short Summary of work done during PS-II: Designed the entire circuit for Boosted Class-D amplifier and performed simulations for various load currents for 2 different Modulation techniques. Compared the obtained results.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso

Objectives of the project: Increasing Efficiency and Reducing EMI emissions in Boosted class-D amplifier

Outcomes of the project: Designed the entire circuit for 2 topologies of Boosted Class-D amplifier which had increased efficiency and reduce EMI emissions

Major Learning Outcomes: Learned about different modulation techniques used in Class-D amplifiers

Details of papers/patents: Submitted a paper for review on the same topic in Texas instruments Technical Conference 2018

Brief Description of working environment, expectations from the company: The working environment at Texas Instruments is much better than what I had expected. I just expect that the results of PPO is announced sooner

Academic courses relevant to the project: Analog Electronics, Power Electronics

Name: Rohan Dutta (2014A3PS0282G)

Student Write-up

Short Summary of work done during PS-II: Worked on Power Management Techniques. Developed a script to automate Power Grid Routing and Switch Expansion in an SoC, followed by IR Analysis and EM analysis.

Tools used (Development tools - H/w, S/w): Tcl , Innovus (Cadence tool)

Objectives of the project: The aim of this project is to develop a script to automate the process of power switch placement, control signal routing and power routing using Tcl and the EDA tool. The script handles expansion even in the most complex cases of unplaceable rectilinear regions. The project involves analysis to come up with a robust power grid with minimal usage of routing resources.

Outcomes of the project: A comprehensive understanding of IC design and layout, A strong base on tcl programming and understanding how to use cadence tools to measure IR and EM.

Major Learning Outcomes: Tcl Programming, Innovus Tool Commands, IC Design- Power

Brief Description of working environment, expectations from the company: The work environment at Texas Instruments is very good. You are provided with plenty of support from the team and state-of-the-art resources to work with. There is a very steep learning curve and help is provided if asked for. However the student is not spoonfed what to do/what not to do. As an intern you must take ownership of the project and approach your mentor/team yourself to get your project moving forward. A lot of flexibility is provided with respect to deadlines however you must ensure you are continuously making progress in your work.

Academic courses relevant to the project: Electrical Sciences, Digital Design , Computer Programming, Microelectronic Circuits

Name: Swati Shikha (2014A3PS0230G)

Student Write-up

Short Summary of work done during PS-II: In a mixed-signal embedded processing SoC like micro-controllers, one of the dominant test cost contributor is the analog content after the embedded non-volatile memories. There has been a consistent requirement and push towards driving the test cost

lower. Conventionally, analog content (either stand-alone or those part of embedded systems) is tested only through functional and specification based tests (SBT) with a focus on specification compliance, design robustness against process deviations and with an inherent, but considerably unsubstantiated assumption of defect coverage. There are no easy and established ways to quantify the effectiveness of any such SBT towards defect coverage. With the recent drive to systematically address test cost entitlement right through product specification, defect based tests (DBT) and structural alternate tests as means to achieve the same are required to be evaluated at an early stage. We attempted to use analog fault simulation as one vehicle to fault grade both conventional and alternate tests to study their relative effectiveness. A case study with a 65 nm,12-bit SAR ADC was presented.

Tools used (Development tools - H/w, S/w): Spectre (Cadence Design Systems) - For Circuit Simulation and Analysis. Python, Perl - For scripting/ automation

Objectives of the project: Enabling Defect Based Test Using Analog Fault Simulation

Outcomes of the project: Presented a formal, practical pre-silicon method for reliable quantification of test effectiveness

Major Learning Outcomes: The project required an in-depth knowledge of Analog circuits, and demanded a firm grasp of coding/scripting tools to process and analyze the huge amounts of data generated. Honed all these skills during the course of this project.

Details of papers/patents: Submitted paper for review in the Texas Instruments Technical Conference (TITC) 2018

Brief Description of working environment, expectations from the company: Great work environment, conducive to learning, inspiring innovation. New ideas and novel methods are highly appreciated.

Academic courses relevant to the project: Microelectronics, Analog & Digital VLSI Design, Analog Electronics.

Name: Akanksha Soni (2013B5A30550P)

Student Write-up

Short Summary of work done during PS-II: Analyze existing oscillator architectures for causes of frequency variations and implementing a new design (for low and high frequency both) with minimum PVT variations.

Tools used (Development tools - H/w, S/w): Cadence ICFB, RubixMosc, VerilogA

Objectives of the project: Design an Ultra-low power oscillator and minimize frequency variation across PVT

Outcomes of the project: Presented a formal, practical pre-silicon method for reliable quantification of test effectiveness

Major Learning Outcomes: The project required an in-depth knowledge of Analog circuits, and demanded a firm grasp of coding/scripting tools to process and analyze the huge amounts of data generated. Honed all these skills during the course of this project.

Details of papers/patents: Submitted paper for review in the Texas Instruments Technical Conference (TITC) 2018

Brief Description of working environment, expectations from the company: Great work environment, conducive to learning, inspiring innovation. New ideas and novel methods are highly appreciated.

Academic courses relevant to the project: Microelectronics, Analog & Digital VLSI Design, Analog Electronics.

Name: Akanksha Soni (2013B5A30550P)

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Tools used (Development tools - H/w, S/w): Cadence ICFB, RubixMosc, VerilogA

Objectives of the project: Design an Ultra-low power oscillator and minimize frequency variation across PVT

Outcomes of the project: Two Oscillator designs based on comparator offset cancellation were designed using Cadence IC design tool. Presented the design in front of the team. It was well received.

Major Learning Outcomes: Devices in different PDKs, tools like Cadence Virtuoso

Brief Description of working environment, expectations from the company: TI provides a very healthy work environment that promotes learning. People are very supportive and helping. They expect you to be have a strong hold of your basics and etiquette of working in a team.

Academic courses relevant to the project: Analog and Digital VLSI Design, Microelectronics, Computer Architecture

Name: Nikita Bisht (2013B4A30778P)

Student Write-up

Short Summary of work done during PS-II: Interdependencies between analog design and digital signals create a requirement for mixed signal approach to verification. The objective of this project was system level verification of low power battery protection IC. It involved writing, simulating and debugging test cases for functional verification and verifying the spec current in various operational modes of the IC.

Tools used (Development tools - H/w, S/w): Cadence Virtuoso, NC Verilog, Simvision, OCEAN

Objectives of the project: Writing, simulating and running test cases for system level verification

Outcomes of the project: Over 180 simulations were run and all the test cases were finally successful. Four bugs were detected and rectified. Efficiency of post simulation analysis was increased almost 12 times.

Major Learning Outcomes: Understand mixed signal verification flow and the tools used for it.

Brief Description of working environment, expectations from the company: Texas Instruments is one of the biggest names in semiconductor industry and it lives up to those expectations. The working environment was extremely positive with people willing to help you anytime you need.

Academic courses relevant to the project: Analog and Digital VLSI design

Name: Varad Joshi (2014A3PS0147G)

Student Write-up

Short Summary of work done during PS-II: I was responsible for two reference designs in the motor control domain for service robots and humanoids. I prepared two PCB boards, design and layout, testing and characterization, and firmware development. The design and user guide has been released through the official TI website, under my name! I used the concepts of power electronics, electric motors and control systems heavily during my project.

Tools used (Development tools - H/w, S/w): MSP430 launchpad, DRV8323, CCS v7, ALTIUM for layout and schematic

Objectives of the project: Reference design for servo control of BDC and BLDC motors.

Outcomes of the project: 2 reference designs successfully completed. One is released, another one in January

Major Learning Outcomes: Motor control algorithm, Microcontroller coding, Design perspective in End Equipment domain.

Details of papers/patents: TIDA - 01588 (released), TIDA- 01587 (Will release by 15 Jan)

Brief Description of working environment, expectations from the company: The team I worked with was very supportive. They gave me all the means to obtain my resources and all the help. But I was forced to find my own way throughout the project. So I learned a lot about other teams and people as well. My mentor was well versed with my work as well ensured I enjoyed the other recreational facilities.

Academic courses relevant to the project: Power Electronics, Control Systems, Electrical Machines.

PS-II Station: Xilinx India Technology Services Pvt. Ltd., Hyderabad

Student

Name: Kritik Ashok Bhimani (2014A3PS0268G)

Student Write-up

Short Summary of work done during PS-II: In System Level Validation test cases, IP(Intellectual Property) is configured through the registers exposed to the rest of system via AXI4 bus. In these various modes, IP is checked for its capability to transmit and receive packets through indigenous GTH and GTY transceivers available on various Xilinx boards. Packets are generated in a generator module and checked for in monitor module which is provided by IP designer. Generation of these systems is automated via TCL scripts for Vivado and C based applications for microblaze to test various inputs of IP. The systems are tested in weekly manner to resolve any errors due to changes in tool(Vivado) or IP. Automation using powerful constructs of TCL was a great learning aspect. C based microblaze applications helped in clarifying my knowledge about pointers and memory-mapped IO. To verify the compliance of the IP with IEEE standard, tests were also carried with IP designed by a different company(Mellanox/Aquantia) on the other end of network. These interoperation tests, gave a brief knowledge about the solutions provided by other companies and how to use them. Various Xilinx IPs like USXGMII, 10/25G, 40/50G, 100G and ILKN 150G were tested.

Tools used (Development tools - H/w, S/w): Xilinx Vivado

Objectives of the project: System Level Validation of Ethernet and Interlaken IPs

Outcomes of the project: Create and Manage existing automated test cases to test system level functionality of IPs. Perform interoperation testing with products from other designers.

Major Learning Outcomes: TCL Scripting, Memory-Mapped I/O, Various IEEE 802.3 protocols

Brief Description of working environment, expectations from the company: Access to various Xilinx FPGA's and server farms to carry out compute intensive synthesis and implementation

Academic courses relevant to the project: Digital Design, Microprocessor Programming and Interfacing, Communication Systems, Data Communication and Networking

Name: Manasa Pudipeddi (2014A3PS0203P)

Student Write-up

Short Summary of work done during PS-II: Validation of MIPI CSI-2 Subsystems. MIPI stands for Mobile Industry Processor Interface and is a global organisation with over 300 members which gives out a standard specifications for all the members to follow, to ensure inter-operability between various devices made by different companies. I worked on the Receiver and Transmitter Subsystems of the Camera Serial Interface (CSI-2). I validated these IPs with third party devices to test conformity. I generated designs on the software and tested the same on hardware.

Tools used (Development tools - H/w, S/w): S/w : Vivado, Software Development Kit (SDK)

H/w: Zynq Ultrascale plus boards, Zynq 7-series boards, Kintex boards, AR0330 sensor, Keysight Analyzer

Objectives of the project: To validate MIPI CSI-2 Rx and Tx Subsystems with third party devices and ensure interoperability

Outcomes of the project: Complete validation was done. A few features were identified during the tests and these improvements would be added to the IPs by the respective team.

Major Learning Outcomes: Understanding of MIPI Protocol and specification, good command over Vivado (Xilinx's design software), Fair idea about the approaches to debug cases, Hardware testing

Brief Description of working environment, expectations from the company: Good opportunity to learn. A lot of different tasks are assigned. Progress is to be reported to the team in a weekly meeting. Good guidance from mentor.

Academic courses relevant to the project: Digital Design

Domain: Computer Science Engineering

PS-II Station: Amazon Business Intelligence, Hyderabad

Student

Name: Anirudh Kasugunti (2014A4PS0482H)

Student Write-up

Short Summary of work done during PS-II: Data Engineer Profile. Had to build tools for analytics team, automate processes and data handling. I also got an opportunity to involve in the analytics part.

Tools used (Development tools - H/w, S/w): SQL, Python, Tableau

Objectives of the project: Automation, Data handling, performance analysis

Outcomes of the project: Automation, Data handling, performance analysis

Major Learning Outcomes: Data handling and visualization tools.

Brief Description of working environment, expectations from the company: The work hours are flexible and the people are really helpful. But we need to take interest and approach them. No issues if you can complete your deliverables within the timeline.

Academic courses relevant to the project: None that i did.

PS-II Station: Amazon Development Center, Bangalore

Student

Name: Samarth (2013B3A70510G)

Student Write-up

Short Summary of work done during PS-II: I was assigned to the advertising team in Amazon. In online advertising, the decision of which ad is to be placed on what site is decided algorithmically, and hence the advertiser doesn't know which site his ad will be placed on. Due to a steady increase in extreme content on the internet, advertisers are more concerned than before about their brand advertisements appearing next to such content. Amazon, as one of the leading digital advertising networks, has been particularly concerned regarding protecting the brand image of advertisers. My project was an exploratory one which involved understanding how brand safety is currently ensured by Amazon, assessing the accuracy of our third-party brand safety partners, experimenting to determine gaps in current brand safety solution and estimating the extent of blind spots in our current solution. The first phase of my project helped in establishing that the current model of evaluating brand safety of a page leaves a lot to be desired and should be improved upon to ensure that our advertisers are safeguarded. To narrow down on what areas we should work on, I developed a really configurable and extensible pipeline, exploiting the AWS cloud solutions, to discover new brand unsafe websites which can be used - to validate 3rd party signals, create a training dataset for brand safety model training and allow user to experiment and find features that can be used in the model

Tools used (Development tools - H/w, S/w): Used Scala programming language and Play framework for enhancing an internal tool. Used Python for creating Proof of Concept of the experimental pipeline. Used AWS Tools like AWS Lambda, AWS Step Functions, Simple Storage Service, AWS Athena and Elastic Cloud Compute

Objectives of the project: Finding gaps in current 3rd party solutions, experimenting with different approaches to fix the gaps, developing a pipeline to find websites similar in content to input URLs

Outcomes of the project: Analysis of current brand safety systems, Development of a pipeline to find websites similar in content to input URLs

Major Learning Outcomes: I was assigned an independent project to work on. I was thus introduced to how a development project is approached from scratch. I learned how to gather technical requirements from ambiguous business requirements, translate them into a flexible, practical and cost-effective design and finally break down the design to small tasks which can be tracked in regular intervals. In the technical side, I improved upon my OOP and parallel programming skills. I was introduced to functional programming (Scala). I also worked with Cloud and distributed computing (AWS Services).

Brief Description of working environment, expectations from the company: Amazon provides an environment which promotes learning. You are amongst people who are enthusiastic about technology, are always willing to learn and ready to help. A lot of different interesting projects are going on in Amazon which highlights the amount of opportunities to learn. PPO chances are team dependent, but people normally get one if they work towards achieving the tasks assigned to them.

Academic courses relevant to the project: OOP, DSA, DBMS

Name: Ayush Sharma (2014A7PS0074G)

Student Write-up

Short Summary of work done during PS-II: During my internship, I had to develop an in-depth understanding of the business use case as well as the various services employed to carry out the accounting.

Tools used (Development tools - H/w, S/w): IntelliJ, Internal Amazon Tools

Objectives of the project: v2 Migration of India Businesses from CALVIN to FLARE for Shipment

Outcomes of the project: India business of Amazon was migrated to v2

Major Learning Outcomes: Concepts of OOPs, Unit Testing, Regression Testing, Deployment

Brief Description of working environment, expectations from the company: Working Environment was really good. The company fulfilled most of my expectations

Academic courses relevant to the project: Object Oriented Programming, Computer Programming, Data Structures and Algorithms

Name: Shivesh Ganju (2014A7PS0146P)

Student Write-up

Short Summary of work done during PS-II: Improved the functioning of the portal used by people from operations team in Europe, Japan, China and North America. Improved the loading time of the web pages which was causing a lot of problems for the ops. I also improved the caching process by optimizing it using parallel threads.

Tools used (Development tools - H/w, S/w): Java Spring

Objectives of the project: To improve the slowness of the portal and to optimise the caching process of the back end service

Outcomes of the project: Improved the loading time of the website by 90%. Improved the cache updation process by 40%. Increased the CPU utilization by 50%

Major Learning Outcomes: Multi threading

Brief Description of working environment, expectations from the company: The work depends on how you want to do it. For me the work was hectic. Had to spend long hours in the office. Apart from work all the people in my team were friendly especially my manager. My manager always looked from my career growth aspect. Amazon provides all the tools you want to achieve success

Academic courses relevant to the project: Object Oriented Programming, Operating Systems, Database Management Systems, Data Structures and Algorithms.

Name: D SAI HARITHA (2013B3A70368G)

Student Write-up

Short Summary of work done during PS-II: I was an SDE Intern in the Advertising Technology team. My project was to explore the usefulness of quantifying website quality in advertising business metrics such as Click through rate, consideration rate and conversion rate. I wrote javascript and scala code to extract features from websites at scale. I then cleaned, transformed, augmented, and visualized the data to identify trends in performance metrics attributed by these features.

Tools used (Development tools - H/w, S/w): Javascript, Scala, AWS Technologies (EC2, S3, SQS, SNS, ASG), Apache Hadoop, Spark, Zeppelin, PIG

Objectives of the project: 1. Featurize quality of a website and extract them, 2. Analyse/Find trends in features across sites

Outcomes of the project: I improved the existing feature detection algorithms, and added new features and algorithms to extract over 25 features per webpage at high precision. This feature extraction pipeline is implemented at scale, and tested. The features extracted for the sites were then interpreted against advertising performance metrics to identify ways to use these features in lifting advertising performance. Several features showed interesting and useful trends, they are still undergoing further experimentation before being put into production.

Major Learning Outcomes: The project required me to code in JavaScript and Scala. It was great exposure to coding in the style where both functional and object-oriented paradigm were used, played to their strengths- writing pure functions at method level, using immutable objects creating code with no side effects, while using the OOP to model the entities, encapsulate data and modularize code. I learnt to use several big data and AWS technologies. I learnt how to think like an SDE, keeping in my mind the following while developing any product - quality, scalability, reusability, benchmarking and writing unit & integration tests. I learnt several methods of data analysis, and how to approach solving qualitative problems. I also learnt several leadership and interpersonal skills.

Brief Description of working environment, expectations from the company: Under the guidance of a mentor, I was given a project to explore from start to finish. I was given the autonomy to make decisions on various design, tech stack and implementation details of my solution. Even though Amazon is one of the largest MNCs out there, all the teams within operate as fast paced, high energy startups. This enriched my internship experience as I could learn and work on a lot more in my 5.5month internship than I expected. The team has regular sync-ups and demos of work done so far. I set up regular bi-weekly meetings with the stakeholders for my project to communicate updates and incorporate their

ideas/advice. SDE Interns must be receptive to others, take ownership and drive the project from start to finish. We must also be ready to learn any technology and start developing on it ASAP.

Academic courses relevant to the project: OOP, DSA

Name: JAIN AVI SHARMENDRA (2014A7PS0103H)

Student Write-up

Short Summary of work done during PS-II: Developed key features for my team. Used Elasticsearch, DynamoDB, AWS Data Pipeline, etc. The domain was web development.

Tools used (Development tools - H/w, S/w): Java, Spring MVC, DynamoDB

Objectives of the project: Features for the AVS platform

Outcomes of the project: Features for the AVS platform

Major Learning Outcomes: Learnt to write unit tests, UI tests. Learnt to write re-usable, clean code.

Brief Description of working environment, expectations from the company: Working environment is stressful compared to other big firms. Deadlines are strict if you work along with the team, rather than being handed a stand-alone project. In most teams, work is dictated by the product management teams and you build a product for internal use at Amazon. Big companies don't care about individual employees. Surpassed expectations, but wasn't handed an offer letter due to internal issues. Was told about this at the very end.

Academic courses relevant to the project: OOPS

Name: Rhythm Jain (2013B4A70695H)

Student Write-up

Short Summary of work done during PS-II: My project involved development of the front-end and back-end of a tool for business rule validation in fraud detection. For the implementation of the project, I had

to learn various concepts like model-view-controller (MVC) architecture, SQL and No SQL databases and knowledge of REST APIs .

Tools used (Development tools - H/w, S/w): The core development was done in JAVA 8 and the testing for the back end was done using Mockito and JUnit frameworks. As part of front-end designing of this tool, I worked on Ruby on Rails. Ruby on Rails is a server-side web application framework written in Ruby, which is a high-level object oriented programming language. Rails is a model-view-controller framework.

Objectives of the project: Tool development for validating business rules for fraud detection

Outcomes of the project: A complete functioning service with an integrated back-end and front-end

Major Learning Outcomes: Apart from learning various software related concepts, I also got a flavor of the life in IT industry. It is very important to be on your toes, responsive and pro-active when it comes to delivering and meeting the deadlines one estimates. I also realised how working in industry is different from academic projects. In the IT industry there is a lot of emphasis on correcting the edge cases associated with a given problem. Also, the code is subjected to a large number of stress tests to make them as bug-proof in the future as possible. The programs are also reviewed by various other experienced developers to reduce possibility of bugs and to maintain a uniform coding standard within the team. Moreover, even while writing the code, a lot of emphasis is laid on making it based on the industry standards, easy to read, at the same time exploring about the advancements in the coding practices.

Brief Description of working environment, expectations from the company: Here at Amazon, the best part was that we were not given any kind of spoon feeding. We were taught to expect help only in minimal matters. The solution was not provided directly. We were asked to read and explore on our own. It was difficult at first but ultimately this made us independent and quick at problem identification and resolution. And this was the biggest factor in helping me transition from academic learning to industrial application. PS-2 helps one to build their persona, knowledge base and interact with industry experts. The experience at PS-2 - if not affect my future career prospects - has at least made me aware of the current industry standard and situation and that adds to better chances at scoring a workplace in future.

Academic courses relevant to the project: Object Oriented Programming with JAVA, Databases, Data structures and Algorithms.

Name: Bandaru Isaac Abhishek (2014A7PS0116P)

Student Write-up

Short Summary of work done during PS-II: Did various feature extractions and feature transformations required for the machine learning model in Scala like binning, scaling etc. Used the spark transformer class as part of the spark machine learning pipeline for all the transformers. Built a trie data structure to store prefixes of URLs and also did various data analysis on the obtained trie. Did feature verification to check whether the feature vector obtained after the feature engineering process were correctly binned and indexed in the metadata.

Tools used (Development tools - H/w, S/w): Scala, Spark, Amazon's EMR, Amazon's S3

Objectives of the project: The objective for omega bidder feature engine is to create a machine learning model and train it over the data obtained from the associates such that it accepts the input about the viewer and the page on which ad will be displayed and generates product which will be most apt. The advertisement thus displayed should also increase the chances of being clicked and thus increasing the revenue generated by the team to the company.

Outcomes of the project: The project is being run as an experiment by the team.

Major Learning Outcomes: Got to learn Scala and Spark. Also learnt many internal Amazon tools like EMR and S3.

Brief Description of working environment, expectations from the company: I was given a conference room along with the other interns in my team. The environment was so quiet and peaceful for doing the work. Also my team sits pretty close to the room, so it was easier for me to interact with them whenever possible. My manager and mentor were easily approachable and have given me all the help and guidance that I need. The project required of me to learn Scala within the first 10 days of my joining here as an intern. And also to document each and every piece of work that I have done so that it is easier for others after me to understand the work that I have done and pick up from where I left off easily.

Academic courses relevant to the project: Machine learning, Object Oriented Programming.

Name: Prasanth Yadla (2013B5A70561H)

Student Write-up

Short Summary of work done during PS-II: The team I worked is SellerFlex, which provides warehouse management solution to sellers in India. I was allocated the project of enabling order cancellation feature to the customers.

Tools used (Development tools - H/w, S/w): Amazon Web Services like S3, EC2, SQS, DynamoDB

Objectives of the project: enabling order cancellation feature to the customers.

Outcomes of the project: Deployed successfully

Major Learning Outcomes: While doing this project, I got practical understanding of distributed computing in real time use-cases.

Brief Description of working environment, expectations from the company: I learnt to solve many business problems and got the opportunity to design software architectures the way I want it. This expanded my horizons and gave me enough freedom to explore new possibilities.

Academic courses relevant to the project: Data Structures and Algorithms, Object Oriented Programming.

Name: Jaikumar Balani (2014A7PS0022P)

Student Write-up

Short Summary of work done during PS-II: I worked on Web Development (full stack) in ruby rails, Machine Learning in python and java, backend java services, amazon web services, etc. It took quite some time to get friendly with Amazon technical infrastructure, but now I appreciate the robustness of the infrastructure. The initial pace of work was great as I was implementing new features in a few days.

But later it got difficult as I had to follow team coding practices using predefined modules, declarations, renderers, etc which took very long to implement. The Spring framework in java, oop in ruby, advanced implementations in js and haml, the brazilpython coding practice were great technical learnings. For the java services, Amazon uses internal service architecture which allows usage of various services inside any package. I learnt about autowiring, inversion of control, enums, etc. In python, I implemented logistic regression, random forests, adaboost ML algorithms and in java, I used Apache Spark for these algorithm implementations. I worked on an Amazon program which had huge ad revenue for Amazon. It was a great experience as I had never worked on such a large scale before.

Tools used (Development tools - H/w, S/w): java service framework, python, aws services, ruby on rails, js, haml, etc

Objectives of the project: Training model and creating training dataset by creating manual labelling tool

Outcomes of the project: Labelling tool and the apache spark model is being used for cross marketplace prediction.

Major Learning Outcomes: spring framework, ruby on rails, apache spark java, sklearn library, js, haml, etc

Brief Description of working environment, expectations from the company: The overall experience at Amazon Development Center, Bangalore was great because I got to work on lots of new and exciting technologies. The past five months have been an amazing learning opportunity. The timings were flexible and work culture was quite chill. My manager updated me with every new technology and activity of the team. Apart from learning various software related concepts, I have also realized how working in industry is different from academic projects. In industry there is a lot of emphasis on correcting the corner cases associated with a given program. Also, the programs are subjected to large number of stress tests so as to make them as bug-proof and future-proof as possible. The programs are also reviewed by various people to reduce possibility of bugs. Moreover, even while writing a program, a lot of emphasis is laid on making it easy to read, understand and manage. These kinds of programming practices are very typical to industry. Practice School experience has also helped us become familiar with the required professional attitude and the working environment of companies. We also got an opportunity to interact with and learn from many professionals who already have a lot of experience of working in industry. The constructive feedback from them has helped us in developing new skills as well as refining other skills. Hence Practice school has provided us ample opportunity to implement the techniques

learnt in classroom as well as learn new concepts. I sincerely believe that due to this hands-on experience we are now better prepared for the future and experienced gained here will help in smoother transition from academics.

Academic courses relevant to the project: ML, OS, CP, OOP

Name: Faizan Mushtaq (2014A7PS0005P)

Student Write-up

Short Summary of work done during PS-II: The major learning that I acquired in my 5 and half months of tenure at Amazon Development Centre, Bangalore, one of the leading corporate giants, are twofold. The first was the technical aspect of things and the second was of character building. Having been inducted into Amazon without much prior Industrial Experience, It turned out to be quite fruitful in terms of the technological expertise that I gained here and at the same time overwhelming in the first couple of weeks. The latter was mainly because a company operating at the scale of Amazon, has gone a long way ahead in building its automated systems. A fresher has to get onboarded to a variety of internal systems within a short span of time given that we have to complete our projects within the designated timeframe. Not only is one expected to become familiar to the tools but also to use them with expertise. I had to pinpoint the problems and solve them in an organized way, one step at a time. This helped me improve my Problem-Solving skills. Apart from that, I had the opportunity to work on a live project which included writing a Java service from scratch. I had to put into action various Computer Science Fundamentals like Multithreading, OS, Object-Oriented Programming, Dependency Injection, Distributed Computing to complete my project. Apart from learning various software related concepts, I have also realized how working in industry is different from academic projects. In industry there is a lot of emphasis on correcting the corner cases associated with a given program. Also, the programs are subjected to large number of tests so as to make them as bug-proof and future-proof as possible. I had the opportunity to write Unit tests and Integration Tests for the same. The programs are also reviewed by various people to reduce possibility of bugs. Moreover, even while writing a program, a lot of emphasis is laid on making it easy to read, understand, manage and future modification. These kinds of programming practices are very typical to industry. In my time here, I also learned how to work alongside other people and learned the true meaning of

teamwork and how important colleagues are in an office space. Some of the take backs from my industrial experience are : You have to deliver results to earn trust. You have to continuously strive yourself to learn and be curious. You have to take ownership of every little deliverable you have produced. My major accomplishments include the trust and confidence that my mentor showed in me while doing the work load. My ability to solve the problems in the way advised and also in the time allotted is definitely an accomplishment for me. I would also count my ability to deliver results as a major achievement .I was able to independently complete a work-heavy project which has huge customer impact for Amazon within the given time span.I would list that as my other achievement.

Tools used (Development tools - H/w, S/w): Java, JUnit, Mockito, Elasticsearch ,Python, Shell Scripting

Objectives of the project: Objective Of the project is to roll out Reporting Service in Elasticsearch 5.6 as opposed to 1.7 which was used earlier.

Outcomes of the project: Achieved

Major Learning Outcomes: The major learning that I acquired in my 5 and half months of tenure at Amazon Development Centre,Bangalore , one of the leading corporate giants , are twofold. The first was the technical aspect of things and the second was of character building. Having been inducted into Amazon without much prior Industrial Experience, It turned out to be quite fruitful in terms of the technological expertise that I gained here and at the same time overwhelming in the first couple of weeks .The latter was mainly because a company operating at the scale of Amazon, has gone a long way ahead in building its automated systems . A fresher has to get onboarded to a variety of internal systems within a short span of time given that we have to complete our projects within the designated timeframe. Not only is one expected to become familiar to the tools but also to use them with expertise. I had to pinpoint the problems and solve them in an organized way, one step at a time. This helped me improve my Problem-Solving skills.Apart from that,I had the opportunity to work on a live project which Included writing a Java service from scratch . I had to put into action various Computer Science Fundamentals like Multithreading, OS , Object-Oriented Programming ,Dependency Injection,Distributed Computing to complete my project.

Brief Description of working environment, expectations from the company: The environment at Amazon was highly competitive to bring out the best in you. People here treat you as any other

employee and consider you as an important part of the team. You are required to show ownership for every little work you do, learn and be curious.

Academic courses relevant to the project: Information Retrieval ,Object-Oriented Programming,Distributed Computing

Name: Rajat Agarwal (2013B2A70866G)

Student Write-up

Short Summary of work done during PS-II: My project was to develop a recommender system based on deep learning and computer vision. I learnt how to apply deep learning at scale and train neural networks on massive datasets. It also involved a lot of distributed computing on Hadoop and on multiple GPUs using MXNet.

Tools used (Development tools - H/w, S/w): MXNet, Python, Hadoop, AWS

Objectives of the project: Given an input URL to the contextual advertising pipeline, recommend the most visually similar products on Amazon as present in the images and described by the text on the webpage.

Outcomes of the project: Developed a crawling algorithm to extract contextually relevant images and text from a webpage which is then used by a service with a convolutional neural network to find visually similar products.

Major Learning Outcomes: Big data, Hadoop and distributed computing, Large scale deep learning and visual recognition, Designing Cloud based applications.

Brief Description of working environment, expectations from the company: As Amazon developed AWS, cloud computing is used by almost all teams - this inevitably makes you learn and think in terms of developing applications using cloud services. Apart from machine learning and cloud computing, Amazon also helped me learn the basics of software development. You are encouraged to write high quality code as every code change goes through an extensive code review before getting shipped and there is a lot of emphasis on code quality and testing. Because of the scale Amazon operates at, there is a lot to learn about designing scalable services and developing tools that allow fast iteration.

Academic courses relevant to the project: Machine Learning, Neural Networks and Fuzzy Logic, Data Structures and Algorithms, Principles of Programming Languages, Operating Systems.

Name: Kovvuru Guna Sekhar Dora (2013B3A70595H)

Student Write-up

Short Summary of work done during PS-II: Worked on enhancements of features for a product called 'Vendor Success Program'

Tools used (Development tools - H/w, S/w): Java, DynamoDB, S3, SNS, SQS, HTML, CSS, JavaScript

Objectives of the project: Enhancement of features for Vendor Success Program

Outcomes of the project: Coral APIs, weekly reporting for the product, front-end enhancements

Major Learning Outcomes: API development, Reporting services development, Front end development

Brief Description of working environment, expectations from the company: The work here was heavy but the learning experience was great.

Academic courses relevant to the project: Object Oriented Programming, Database Systems

Name: Shantanu Rathi (2014A7PS0123H)

Student Write-up

Short Summary of work done during PS-II: I have worked on a variety of projects, each utilizing various technologies at Amazon. All the work for my team involved both front end and back end coding according to the MVC architecture. I was also involved in auxiliary process such as gathering information from stakeholders, design review, etc.

Tools used (Development tools - H/w, S/w): Java, JavaScript, JSP, Tomcat, Spring

Objectives of the project: Create a new web application

Outcomes of the project: Created a new web application which was then tested out in one production site before worldwide rollout.

Major Learning Outcomes: As an engineer, I found that my job role was not strictly constricted to accepting a project and coding the changes. I was also expected to gather information from stakeholders, come up with designs and document all my work. I found this to be slightly challenging at first, especially as I did not know how to speak with someone in a professional setting. Over time, I have grown in this regard and now I can initiate conversations with Amazon employees halfway around the world if I need any help.

Brief Description of working environment, expectations from the company: The working environment at Amazon is very friendly and perfect for new graduates. I can walk into work wearing shorts and speak with my manager's manager on a first name basis without raising any eyebrows. In fact, people are usually more surprised to hear someone being addressed as "Sir" or "Ma'am". The working hours are flexible, and you are not expected to work a certain number of hours, as long as you can deliver on your projects. I have grown to think of my team mates not just as coworkers, but also as friends, as we often go for dinner outings to various eateries around Bangalore.

Academic courses relevant to the project: OOP.

Name: Puneet Duggal (2014A7PS0857H)

Student Write-up

Short Summary of work done during PS-II: Designed Create And UpdateLoan API and GetLoanByPartnerId API for GLMLoanService.

Tools used (Development tools - H/w, S/w): Google Guice, Hibernate, Aurora Database, Brazil CLI

Objectives of the project: To reduce hassle of acquiring loans for Amazon sellers from banks. Also build model such that it is easily scalable

Outcomes of the project: Cannot be disclosed

Major Learning Learnt various leadership skills like Dive Deep, Bias for actions etc.

Details of papers/patents: None.

Brief Description of working environment, expectations from the company: Excellent Environment.

Excellent Work and people work with motto work hard stay foolish.

Academic courses relevant to the project: DBMS, OOP

Name: Naresh Peshwe (2013B4A70904G)

Student Write-up

Short Summary of work done during PS-II: I did my PS II at Amazon Development Center, Bengaluru. I got to learn lots of new things. Right from AngularJS to big data technologies like Spark and Hadoop. At Amazon, everyone is treated equally. May it be an intern or an employee, every individual's opinion is weighed equally. This was one thing I liked about working here. You point out and suggest things if you don't feel something is right. This makes it easy to learn as it helps break barriers within the team. Other things I learnt at Amazon was best coding practices, design patterns, writing testable code and thinking in terms of how well can our software scale rather than just write normal code.

Tools used (Development tools - H/w, S/w): Spark, Hadoop, AWS, Angular, JAX-RS

Objectives of the project: Build a few metrics based on huge data and build web portal

Outcomes of the project: Publishing metrics and web portal

Major Learning All technologies used in the project and best software development practices

Brief Description of working environment, expectations from the company: The people were very knowledgeable and helpful.

Academic courses relevant to the project: OOP, DSA, DAA.

PS-II Station: Amazon Development Center, Chennai

Mentor

Name: Sarthak

Designation: Project Lead

Students work is satisfactory.

Faculty

Name: Pradheep Kumar K

Comments: Expectations from industry: Students need to have knowledge in the areas of predictive analytics, machine learning, deep learning and Big Data Analytics.

Student

Name: Dhanu Pillai (2014A7PS0047G)

Student Write-up

Short Summary of work done during PS-II: Created an album management service for customers where they can update and query images against their identifiers.

Tools used (Development tools - H/w, S/w): Android, Mockito and JUnit

Objectives of the project: To create an easy to use album management service which could serve internal as well as external customers in storing and accessing their images from anywhere.

Outcomes of the project: Project was completed successfully and is in production stage.

Major Learning Outcomes: Learnt test-driven development. Writing units tests and intricacies in writing production level code. Understood importance of design patterns in services.

Brief Description of working environment, expectations from the company: Working environment is extremely casual. Managers and senior developers are helpful. We were treated like any other full time employee. Expectations from the company would be more frequent interactions with HR regarding internship and conversion(PPO) processes.

Academic courses relevant to the project: Object oriented programming.

Name: Imran Ansari (2014A7PS0132H)

Student Write-up

Short Summary of work done during PS-II: Developed a self-service portal for internal customers

Tools used (Development tools - H/w, S/w): AngularJS , Bootstrap , AmazonUI , MrTable

Objectives of the project: To reduce operational load of team by developing self-service portal

Outcomes of the project: Portal is ready for within team usage , requires audit integration before exposing to customer

Major Learning Outcomes: Web development with modular architecture , learnt frontend technologies like angular JS , bootstrap , AmazonUI , wrote backend APIs .

Brief Description of working environment, expectations from the company: Work environment is cheerful and helpful . Daily updates helped me in gauging individual performance and scopes for improvements .

Academic courses relevant to the project: Object oriented programming.

Name: Charitha Reddy (2014A7PS0006H)

Student Write-up

Short summary of work done during ps-ii: worked on project called ingrid

Tools used (development tools - h/w, s/w): gwt, gremlin

Objectives of the project: development of front end

Outcomes of the project: a tool for amazon customers

Major learning outcomes: learnt gwt and other graph tools

Brief Description of working environment, expectations from the company: it was a very enriching experience

Academic courses relevant to the project: JAVA

Name: Aditya saxena (2013B1A70942G)

Student Write-up

Short Summary of work done during PS-II: Alexa skill development

Tools used (Development tools - H/w, S/w): Develop Alexa Skill

Objectives of the project: DEVELOPMENT OF FRONT END

Outcomes of the project: Develop Alexa Skill

Major Learning Outcomes: programming methodology

Brief Description of working environment, expectations from the company: nice, adaptable, comfortable environment, good projects

Academic courses relevant to the project: OOP

PS-II Station: Amazon Development Center, Delhi

Student

Name: Regatte Jeevan Reddy (2014A7PS0148H)

Student Write-up

Short Summary of work done during PS-II: I have worked on the following “

- a) Automating the test suite using Espresso and UIAutomar frameworks
- b) Integrating the automated tests in pipeline

Tools used (Development tools - H/w, S/w): Android Studio, Espresso, UIAutomator

Objectives of the project: Automate the manual testing.

Outcomes of the project: Reduced testing time from 7 days to 3 days.

Major Learning Outcomes: Android Programming.

Brief Description of working environment, expectations from the company: amazon has many divisions working in almost all the sectors of computer science and more. Hence, the possibilities are endless.

Academic courses relevant to the project: OOP

Name: Pranesh Anubhav (2013B5A70417P)

Student Write-up

Short Summary of work done during PS-II: One of the projects ensured that notification to customers never failed and at the worst it can delay. The other project was to send invoice notifications which automated the process of generating and sending invoice notification to the property owners of The Hub.

Tools used (Development tools - H/w, S/w): Amazon AWS technologies, Java

Objectives of the project: Design and develop re-drive feature for Omni Notification Service which handles all notifications to the customers of Amazon Hub.

Outcomes of the project: Successfully completed the project

Major Learning Outcomes: Design patterns, amazon technologies

Brief Description of working environment, expectations from the company: Competitive culture, Timings are flexible

Academic courses relevant to the project: OOP, DSA, DBS

Name: Bhuvan Gupta (2014A7PS0008G)

Student Write-up

Short Summary of work done during PS-II: I worked on building a Metric System for Amazon. The metric system computed various kinds of metrics for one of the sub projects (a framework and bunch of machine learned models) of Amazon. This metrics provided the online performance statistics, deep information about the model for each prediction and served the business interest. I also worked on analyzing some signals of the Seller's profile. Further, I build a predictive (machine learned) model which would help Amazon identify the pain points of the seller. Thus the solution would be displayed to the seller as soon as he clicks on 'Get Support'.

Tools used (Development tools - H/w, S/w): Apache Spark, Python, AWS DynamoDB, AWS S3, AWS EMR, AWS Lambda

Objectives of the project: Building a metric system, Building a Predictive Model.

Outcomes of the project: Metric System, Analysis of Seller Profile Events and a predictive model to predict the case creation behaviour of seller.

Major Learning Outcomes: Apache Spark, AWS

Brief Description of working environment, expectations from the company: The working environment is quite professional. I had a bunch of pretty enthusiastic, full of zeal, and really helpful peers. The best thing I liked about Amazon is the no boundary attached policy. That means, I was free to work on any

aspect of any program. If I had some ideas, my opinions were well discussed and thought upon. The agility and the rather active work environment is something Amazon is known for. I worked with some of the cutting edge technologies.

Academic courses relevant to the project: Data Mining, Machine Learning.

Name: Aveepshito Mitra (2014A7PS0120P)

Student Write-up

Short Summary of work done during PS-II: The project involved the design of a model and service to return Container details, given user queries. A list of conditions could be provided, along with the field to be ordered on (ascending or descending). Also, the number of queries to be returned could be specified, but was not mandatory. Nor was it mandatory to order, and an unordered response would be returned if no order was specified. Attempt has been made to keep the code scalable, and accommodate more databases (for example, SQL-based ones) in the future. Return of specific desired fields is being tried now. The queries were taken in a user-friendly form, and then converted to the required Elasticsearch query JSON format. The Kibana interface was used to form those queries. Validation is done to see if the query values are feasible. If yes, a network call to the Elastic Search cluster end point brought the required number of results, which were sorted within the code to give to the users as output. Otherwise, exception is returned. This has been implemented to ensure that too many unnecessary network calls are not made. Test cases have been written to ensure a high code coverage ratio

Tools used (Development tools - H/w, S/w): Java, Elasticsearch (Kibana interface), GIT

Objectives of the project: Provide a layer of abstraction over the database to users, and return results to queries based on simple, user-friendly inputs

Outcomes of the project: New model and service designed to query the database, which is largely scalable

Major Learning Outcomes: Learnt to develop a xml model and service from scratch in java, and to query on Elasticsearch using Kibana interface. Also learnt about importance of maintaining scalability, and how to do so.

Brief Description of working environment, expectations from the company: A wonderful working environment, with extremely helpful and friendly team members, mentor and manager. Great learning experience for me, even with no previous experience in proper software development and engineering

Academic courses relevant to the project: Database Systems, Object Oriented Programming

Name: Rudra Pratap Singh (2014A7PS0064P)

Student Write-up

Short Summary of work done during PS-II: Amazon Gurgaon has two major teams - Access Point Technology and Last Mile Technology teams - both dealing with the customer delivery experience. I was in the Access Points team which is mainly responsible for developing and maintaining the front and back end systems for alternate delivery points like lockers, stores, etc. collectively known as access points. My first task was to extract the demand, availability and rejection metrics for access points from the retail checkout page, which had previously been lost due to roll out of greying out feature. I used a lot of tools and service to emit the metrics and automate the data pipeline to finally store the data on a platform where the business team could easily query and analyze it. Apart from this, I was given a second project where I had to generate and persist order vs delivery day probability curves from home shipments data to be used for predictions and reservations for lockers at ZIP-5 level. This task included programming in Java along with use of AWS libraries to store the generated curves in Dynamo DB.

Tools used (Development tools - H/w, S/w): Excel, Git, IntelliJ. Amazon tools - EMR, EDX, Redshift, ETL, Dynamo DB, S3

Objectives of the project: To emit and pipeline demand, availability and rejection metrics for lockers

Outcomes of the project: Successfully stored the metrics in Redshift clusters where it is being used by the business team to analyze lockers in various regions.

Major Learning Outcomes: Got to learn Perl, git, data storage and design patterns.

Brief Description of working environment, expectations from the company: The working environment at Amazon is amazing. Everyone is very friendly and helpful. I got to learn so much from my peers. There

are no strict working hours at Amazon and people are allowed to work according to their own schedules. There is also option of working from home sometimes. Amazon provides with all the basic facilities for a better working experience. The workload is not very consistent , so peak times can be very tiring and some days might be very chill also.

Academic courses relevant to the project: OOP, OS, DSA

PS-II Station: Amazon Development Center, Hyderabad

Student

Name: Regatte Jeevan Reddy (2014A7PS0148H)

Student Write-up

Short Summary of work done during PS-II: worked on the internal debugging portal for MYP team

Tools used (Development tools - H/w, S/w): Android Studio, Espresso, UIAutomator

Tools used (Development tools - H/w, S/w): Coral, java, Guice, SpringMVC, horizonte, jsp

Objectives of the project: Outcomes of the project: Add new features to the internal debugging portal

Outcomes of the project: Added 2 new features to the internal debugging portal

Major Learning Outcomes: learnt google guice and spring mvc framework and got an insight on industrial level coding

Brief Description of working environment, expectations from the company: The team i was working with was shifting from traditional relational databases to amazon dynamoDB. as part of it there is a need for new debugging portal to make the oncall work easy. here i have added two new features to the debugging portal

Academic courses relevant to the project: DBMS, Object oriented programming, OS

Name: Saksham Nagar (2014A7PS0040P)

Student Write-up

Short Summary of work done during PS-II: I worked on 3 projects during my PS term. First was a UI to enable Amazon Sellers to create promotions for their products, which involved working with Play Framework and programming in Scala and JavaScript. Concepts involved were REST, understanding of MVC frameworks, good sense of user experience. Second project was a notification service for sellers. I used a service framework internal to Amazon, and used multiple AWS services. I collaborated with a

team in the US for using a service made by them for delivering email notifications. Programming language used was Scala. Last project was a Visualization tool used for debugging purposes. I had to gather data from DynamoDB tables in different AWS accounts and make an API call to an internal team service to get the relevant data. This tool was made in Play Framework using Scala.

Tools used (Development tools - H/w, S/w): Play framework, Scala, AWS, Cloud-based desktops

Objectives of the project: Making it simple and convenient for Amazon Sellers to use the UI and notification service.

Outcomes of the project: Great reviews by Amazon sellers on the UI, notifications being successfully sent to sellers.

Outcomes of the project: Writing production level code, working with and debugging a large code base, programming frameworks, architectures, application design.

Brief Description of working environment, expectations from the company: Working environment is great, infrastructure commensurate with one of the biggest companies in the world. Sometimes interns are required to put in more hours than usual. However, it ensures exposure to pressure situations in careers.

Academic courses relevant to the project: Computer Networks, OOP, Principles of Programming Languages.

Name: AKSHAY REDDY DONGALA (2014A7PS0063H)

Student Write-up

Short Summary of work done during PS-II: Implemented ADSP Document Screening Handler Service, the API which accepts documents from external resources for document screening. The screening process of document is implemented as a workflow as ADSP is distributed system and implementing workflow has a lot of advantages. DSH services invokes the workflow and stores the screening request details in the DynamoDB Table. The operation SubmitRequest accepts documents for screening and then validates the document to make sure if the document complies with the minimum requirements

needed to get screened and starts the workflow followed by storing the document screening request details stored in DynamoDB with the initial status of the screening request as STARTED. After the entire workflow is invoked and finishes the screening of the document submitted the DSH Service gets the score of the document from other component of ADSP and then the service updates the model of the document screening request.

Tools used (Development tools - H/w, S/w): Java, Google Guice, Junit, Mockito

Tools used (Development tools - H/w, S/w): Implemented a coral service to accept the document requests for screening and execute workflow.

Objectives of the project: Outcomes of the project: Great reviews by Amazon sellers on the UI, notifications being successfully sent to sellers.

Outcomes of the project: The service developed will be able to start the screening workflow on documents submitted by Amazon sellers to check for legitimacy.

Major Learning Outcomes: Clean Coding, Unit testing and Integration testing.

Brief Description of working environment, expectations from the company: Launch plan sent by my manager helped me learn Amazon tools and process of developing and deploying the service in Amazon. I had a very supportive work environment at Amazon. My manager, mentor and the other team members have constantly encouraged me, provided valuable guidance and support for the successful completion of the project work. The team expected that I adhere to their coding guidelines and write quality code.

Academic courses relevant to the project: OOP, DBMS, Image Processing.

Name: Akshith Reddy Saddi (2013B3A70673P)

Student Write-up

Short Summary of work done during PS-II: I implemented a service containing two API's which accept request id's from another component for performing a series of screening checks on documents. The service has been implemented as a distributed system. Implemented the service using DynamoDB and

Simple Workflow Service. Additionally, I worked on image processing tasks using OpenCV and AWS Rekognition.

Tools used (Development tools - H/w, S/w): Java, XML, Guice (Dependency Injection), Junit, Mockito, DynamoDB, SWF, Rekognition, OpenCV

Objectives of the project: Outcomes of the project: Implement a Coral Service to execute a workflow that stores the screening request and status in a DynamoDB table.

Outcomes of the project: Successfully implemented the service which forms a essential part of an upcoming product.

Major Learning Outcomes: Learned distributed computing, image processing and NoSQL database concepts. Additionally learned to write quality code and the importance of testing.

Brief Description of working environment, expectations from the company: Amazon has a great work culture. Team members and managers are helpful in all ways. Good place to learn and grow as a software developer. Our team has high work expectations and more results to be delivered in a single sprint.

Academic courses relevant to the project: Object Oriented Programming, Data Structures and Algorithms

Name: Jasti Brahmarshi (2014A7PS0055P)

Student Write-up

Short Summary of work done during PS-II: Invoices are issued between Amazon and third-parties to indicate the amount owed in exchange for services provided. This service provides the platform for validation of invoices from third party carriers to Amazon in exchange for transportation of goods provided as a service. Usually these invoices are sent from service providers to Amazon. These invoices are validated before passing to payments. This service is implemented as a Java package and spring application framework code is used for the web application. Mockito and JUnit are used to write and test the test cases for the source code of invalid service. This package has some dependencies on other packages. These changes are required to make the service as complete and error free. Legal compliance

validation rules are essentially needed in the compliance validation changes. New validation rules are added to support Compliance Validation. Reporting actions are also added to support rule validation failures in Invoice Validation Service. Git commands are needed to send the changes made locally. These changes are deployed finally by using git commands. During the course of my internship, I worked on DynamoDB, SQS, AWS tools.

Tools used (Development tools - H/w, S/w): Java, Mockito, JUnit, Spring framework

Objectives of the project: Outcomes of the project: Enhancing Invoice Validation Service

Outcomes of the project: Compliance Validation rules are added to Invoice Validation Service

Major Learning Outcomes: Industry coding, Object Oriented Programming

Brief Description of working environment, expectations from the company: Amazon has a great work culture. Team members and managers are helpful in all ways. Good place to learn and grow as a software developer. Our team has high work expectations and more results to be delivered in a single sprint.

Academic courses relevant to the project: Object Oriented Programming, Data Structures and Algorithms

Name: Ayushi Behl (2014A7PS0145H)

Student Write-up

Short Summary of work done during PS-II: Worked on building an SOP Automator (Standard Operating Procedures)

Tools used (Development tools - H/w, S/w): IDE -eclipse, IntelliJ Amazon specific build tools

Objectives of the project: Outcomes of the project: Implement a Coral Service to execute a workflow that stores the screening request and status in a DynamoDB table.

Outcomes of the project: The Project went into Production

Major Learning Outcomes: Learned distributed computing, image processing and NoSQL database concepts. Additionally learned to write quality code and the importance of testing.

Brief Description of working environment, expectations from the company: I had a very supportive work environment at Amazon. My manager, mentor and the other team members have constantly encouraged me, provided valuable guidance and support for the successful completion of the project work. The team expected that I adhere to their coding guidelines and write quality code.

Academic courses relevant to the project: DBMS, Image Processing

Name: Shiv Kumar (2014A7PS0031P)

Student Write-up

Short Summary of work done during PS-II: Self-Service portal for operational monitoring and automating macros in Data collection Excel tool. Excel macro automation: If a set of excel templates have same macros, change of macro code in one template should be reflected in other templates. This process is to be automated instead of manually changing each template. This would make development process much faster and less tiresome. Self Service Operational Portal: An internal team portal to enable the business team and on-call to monitor and do simple configuration changes to the VISA product, starting with Filing and expanding to Registration.)

Tools used (Development tools - H/w, S/w): Amazon EC2, AWS Services, Spring Framework, Apache libraries.

Objectives of the project: Outcomes of the project: Automating macros in Excel, Internal Team Portal.

Outcomes of the project: Reduction of day to day manual work.

Major Learning Outcomes: Writing proper code with test cases, Improvement in Deep Dive Skills

Brief Description of working environment, expectations from the company: Your entire internship experience depends on the team you are a part of. Although my team was very helpful, I felt that the

workload was quite high. Also, you'll have to communicate a lot with your team members to get your work done.

Academic courses relevant to the project: Object Oriented Programming.

PS-II Station: National Aerospace Laboratories, Bangalore

Mentor

Name: Mr Dinesh Vincent

Designation: Director R&D

Work done by the Student, interactions with them: Shubhi primarily worked on developing test scripts for display module. She also worked on analysing and documenting ioctl calls between userspace and kernel. Highlights of major achievements, outstanding student characteristics: We would like to appreciate the way she went around with the tasks assigned to her. She took up any task assigned to her, she's very well motivated and tries to get the work to conclusion. Takes feedback and is eager to learn.

What we look for in interns:

We don't expect any particular expertise from interns. But few things that can be improved:

- i. Better grasp on programming languages and computer science basics.
- ii. Prepare them on practical front.

E.g.: Generic Linux usage, command line usage, Embedded systems basics, etc.

- iii. Improve PS application process to give students an idea of what they can expect to work-on after joining any given organization (may be feedback taken from older students can be provided to applicants).

Finally, really appreciate the effort BITS has taken in terms of Practice School. I feel PS gives Students an experience of the real-world work environment. This will surely help the students in deciding on their future goals.



Student

Name: Sai Manoj kadiyala (2014A7PS0020P)

Student Write-up

Short Summary of work done during PS-II: A login sample website implementing 3 - Tier Architecture using ASP.NET, C#, ADO.NET, SQL.

A GUI Application to connect to Microsoft Team Foundation Server and the Work Items based on certain filters. It was done using ASP.NET and C#.

A Web Application which has two dashboards for the two teams, which displays the required graphs to give the overview of progress of the teams. It also includes feature to track Bug Change History tracking which helps in tracking the work progress of both the teams.

Tools used (Development tools - H/w, S/w): ASP.NET, ADO.NET, C#, SQL, HTML, CSS, BOOTSRAP, REST API with Visual Studio.

Objectives of the project: Outcomes of the project: The main objective is to track the progress of work done by the teams in Aurigo.

Outcomes of the project: The company now has the provision to track the progress of the work done by the teams very easily with the Sprint Metrics website which also includes graphs in dashboards for quick reference.

Major Learning Outcomes: Web Development and Windows Application development using ASP.NET and C#.

Brief Description of working environment, expectations from the company: Work Environment here is very good and the best one I have experienced. All the employees are very friendly and we have a gaming room to reduce the stress. There are many cultural activities held by the company. They also organized a trip during our PS-II. We are having a flash mob for Christmas but we wouldn't be attending it. Overall it was a great experience for me and Aurigo Software is a great place to work.

Academic courses relevant to the project: DBMS, Computer Networks.

Name: Junaidul Islam Bhat (2014A7PS0007P)

Student Write-up

Short Summary of work done during PS-II: 1). Login Sign-Up website Implementing 3-Tier Architecture Model. Tools used were Asp.Net , C#, SQL , Ado.Net, Bootstrap.

2). GUI Application to get work items of the Projects by connecting to Microsoft Team Foundation Server . Tools used were Asp.Net, C#, Web APIs .

3). A web based dashboard for the company to track the sprint metrics .

Tools used were Asp.Net , C#, Bootstrap, c3.js, d3.js , json .

Tools used (Development tools - H/w, S/w): Asp.Net , C#, SQL , Ado.Net, Bootstrap , c3.js, d3.js , json

Objectives of the project: Outcomes of the project: To build a sprint metrics dashboard for the Aurigo Software.

Outcomes of the project: The project would help the Aurigo web and mobile team to track the work items and plan for the next sprints accordingly. This tool would be helpful to project managers also as they can get the overview of the work done by the team members.

Major Learning Outcomes: Learnt Web application development, Windows application development , Microsoft TFS and related WQLs .

Brief Description of working environment, expectations from the company: Aurigo Software has a great working environment. Team members will always be there to assist in every possible way and make sure we don't get stuck and at the same time we are not spoon fed everything. Mentor assigned to me by the company helped be to become well versed in learning new languages. A long list of extra-curricular activities were held during my stay and they sure are fun and help in team building.

Academic courses relevant to the project: DBMS, Computer Networks.

PS-II Station: belong.co, Bangalore

Faculty

Name: Uma Maheswari Natarajan

Comments: Expectations from industry: These stations look for computer science students having knowledge on Java, Python and if possible web development experience. Also good analytical skills, decision making and communication skills.

Student

Name: KICHANNAGARI JAIHINDH REDDY (2014A7PS0056H)

Student Write-up

Short Summary of work done during PS-II: Multiple projects. Created a dashboard to visualise data. Automated report making.

Tools used (Development tools - H/w, S/w): Python, JavaScript, React.js, Flask

Objectives of the project: Improve Efficiency of Customer Success team

Outcomes of the project: Improved the efficiency of Customer Success team

Major Learning Outcomes: The problem of Misconception is larger than any issue faced in development i.e, understand the problem properly before trying to solve it.

Details of papers/patents: Project abstract was accepted for ILAFM-2016 Conference for oral presentation, and work for Journal is on progress.

Brief Description of working environment, expectations from the company: An excellent environment to learn things and grow, especially for extroverts. People are always ready to help, and nice to you, sometimes a little too nice.

Academic courses relevant to the project: Software Engineering, Machine Learning

Name: Neel Jambhekar (2013B4A30425G)

Student Write-up

Short Summary of work done during PS-II: Implementation of word2vec , Neural Nets for different applications.

Tools used (Development tools - H/w, S/w): Python , Keras

Objectives of the project: Resume Parsing , Designation Ranking

Outcomes of the project: Ranking of designations.

Major Learning Outcomes: Word2vec

Brief Description of working environment, expectations from the company: Great environment and flexibility. Lots of learning opportunities

Academic courses relevant to the project: Machine Learning , Neural Networks , Information Retrieval

Name: Tushar Singh (2013B2A30828P)

Student Write-up

Short Summary of work done during PS-II: Analysed email data from belong domain, to know better how employees were interacting with customers of Belong. Also leads in an account, frequency of communication. Worked with Python and Google sheets to do this simple analysis. Secondly, learnt about Elasticsearch queries and aggregations, to pull data from the company database. This data was then analysed to find people's average tenures when they changed jobs eg.(People moving from Microsoft to Jio).

Tools used (Development tools - H/w, S/w): Python, Elasticsearch, PostgreSQL

Objectives of the project: To identify trends in terms of average tenure of people at companies (eg. Jio/Airtel/Vodafone)if they quit after moving from other top companies (eg. Microsoft/Amazon/Google), helping hire people that fit better into an organisation on the basis of this.

Outcomes of the project: Help our customers with this data analysis in targeting the right pool of candidates which would fit in well at their organisation.

Major Learning Outcomes: Learnt about Python programming, working with pivot tables, databases and Elasticsearch.

Brief Description of working environment, expectations from the company: The work environment at Belong was quite positive. People are hard working and driven. I personally had a great mentor, who guided me in my project.

The employees at the company set the expectation according to what the intern knows. Else enough time is offered to learn a new skill/software/tool. A lot of freedom is also given to interns, people are helpful and approachable.

Academic courses relevant to the project: Object Oriented Programming

Name: Pranjal Mittal (2013B4A40793P)

Student Write-up

Short Summary of work done during PS-II: Started as a talent advisor talking with candidates about potential job openings. Moved onto work with Analytics identifying metrics to monitor and creating dashboards using SQL to monitor the identified metrics.

Tools used (Development tools - H/w, S/w): SQL

Objectives of the project: To find the best time to get in touch with candidate and maximise the efficiency of talent Advisors.

Outcomes of the project: Certain blocks of time were identified in the day which increased the Reply Rates and use of calendar was promoted to increase efficiency

Major Learning Outcomes: Understood minute details that need to be kept in mind while cleaning data. Learnt about differentiating between relevant and non-relevant metrics while validating an experiment.

Brief Description of working environment, expectations from the company: Company's work environment was pretty open with flexible work hours and possibility of working on weekends to clear backlogs. Also, everyone within the office was approachable whenever I faced a problem. Since, the Belong team has a large chunk of BITS alumni, I was able to find not one but a couple of mentors.

Academic courses relevant to the project: None. Industry specific work.

Name: NANDAN THAKUR (2014A8PS0481G)

Student Write-up

Short Summary of work done during PS-II: Did Topic Modelling in Python using machine learning packages such as flashtext and GuidedLDA

Tools used (Development tools - H/w, S/w): Python, Django

Objectives of the project: Standardization and verticalization

Outcomes of the project: Was able to classify 5 million documents into various classes using a machine learning algorithm known as Latent Dirichlet Allocation

Major Learning Outcomes: Topic Modelling, Latent Dirichlet Allocation, Machine Learning, Artificial Intelligence

Brief Description of working environment, expectations from the company: Working Environment is really good and with decent enough of hard-work, PPO will be given

Academic courses relevant to the project: Machine Learning, Neural Networks and Fuzzy Logic

PS-II Station: AutoRABIT, Hyderabad

Student

Name: P.SaiAnurag Reddy (2014A3PS0200G)

Student Write-up

Short Summary of work done during PS-II: Integration of business intelligence tool for reporting and analytics. Crating a reporting tool for the clients as well as the organisation

Tools used (Development tools - H/w, S/w): Java, Birt, HTML, jQuery, d3js.

Objectives of the project: Outcomes of the project: To create a module for reporting

Outcomes of the project: A module was created through which all the necessary reports are generated

Major Learning Outcomes: Dsa, Oop, front end and back end develoment

Brief Description of working environment, expectations from the company: As the company is a startup the work environment is very active where every one is involved in everything in one way or the other. As we would be getting hands on everything the learning curve at this company is huge.

Academic courses relevant to the project: Dsa, Oops

Name: Sai Likhith Kotha (2014A7PS0028G)

Student Write-up

Short Summary of work done during PS-II: We were asked to introduce Business Intelligence into our company by preparing usage reports and dashboards

Tools used (Development tools - H/w, S/w): D3.js and BIRT

Objectives of the project: Outcomes of the project: Introduction of Business Intelligence in AutoRABIT

Outcomes of the project: Preparing interactive dashboards

Major Learning Outcomes: Data Visualization using D3.js

Brief Description of working environment, expectations from the company: Since the company is a startup founded in Hyderabad, you might face a language barrier. The work environment is decent

Academic courses relevant to the project: Dsa, Oops

Name: Panshul Garg (2014A7PS0058G)

Student Write-up

Short Summary of work done during PS-II: I worked on a web app as a full stack developer, taking care of the front end as well as the back end using SOAP web services.

Tools used (Development tools - H/w, S/w): Eclipse, JAVA, jQuery

Objectives of the project: Outcomes of the project: Client Specific

Outcomes of the project: Optimisation

Major Learning Outcomes: Software and Code Management, Optimisation in Code

Brief Description of working environment, expectations from the company: The company was very lenient towards timings. We had to manage our work before the deadline and keep reporting daily to our managers.

Academic courses relevant to the project: Object Oriented Programming

PS-II Station: Avaya India Private Limited, Pune

Student

Name: P. SaiAnurag Reddy (2014A3PS0200G)

Student Write-up

Short Summary of work done during PS-II: Web-application development using Java, ReactJS and Redux. Starting from small Proofs-of-concept with little relevance, to working on development of major products.

Tools used (Development tools - H/w, S/w): Eclipse, ReactJS, Redux, Maven, GIT, SVN, NodeJS

Objectives of the project: Outcomes of the project: To develop some features of a web-application

Outcomes of the project: Developed some features of the web-application

Major Learning Outcomes: Learnt how to develop web-applications, along with proficiency in tools used such as Java, Javascript, ReactJS, Redux and GIT

Brief Description of working environment, expectations from the company: Expectations from the company were low at the start, but as time went on, they started giving more and more work with actual relevance. Eventually, I was given the opportunity development of one of their flagship products. Environment is decent. There is a cheap cafeteria with decent food. However, I was given a mediocre desktop and not a laptop, resulting in some annoyances due to its poor performance and lack of flexibility.

Academic courses relevant to the project: Object Oriented Programming, Data Structures and Algorithms

Name: Himanshu Lakhotiya (2014A7PS0052G)

Student Write-up

Short Summary of work done during PS-II: Implemented PBAP in Avaya Vantage (Android based desk phone) and Fixed numerous bugs and implemented some features in Avaya J129 phone.

Objectives of the project: Outcomes of the project: Implementing new features and fixing bugs in Avaya phones.

Outcomes of the project: Implemented new features and fixed numerous bugs in Avaya phone's software.

Major Learning Outcomes: C++, JavaScript, HTML

Brief Description of working environment, expectations from the company: Working Environment is very flexible(work timings, clothes), and the work given to me was quite easy. They haven't given any PPO yet, and don't usually give it, so keep that in mind.

Academic courses relevant to the project: Object Oriented Programming.

Name: Amasha Das (2014AAPS0002H)

Student Write-up

Short Summary of work done during PS-II: Creating EP&T Security Dashboard to monitor security threats in one complete view.

Tools used (Development tools - H/w, S/w): Confluence,Excel, JavaScript, CSS, PHP, JQuery, Ajax, Chart.js,ASP.net and MS SQL.

Objectives of the project: Outcomes of the project: To create a website Security Dashboard

Outcomes of the project: Successfully created a running website on the test as well as production server.

Major Learning Outcomes: Learned a lot about full stack development

Brief Description of working environment, expectations from the company: Working environment was comfortable and nice. the people there were very helpful with everything and mentors guided us properly.

PS-II Station: Bundl Technologies Private Limited (Swiggy), Bangalore

Student

Name: Manas Vaidya (2013B1A30716G)

Student Write-up

Short Summary of work done during PS-II: Designed a Go-To-Market strategy and launched a content enrichment project to collect data from over 20,000 restaurants for Swiggy. The data will be used to enhance the search and filtering mechanism on the app front and display additional exhaustive information about dishes to the customer. It is aimed at helping a customer make an informed buying decision.

Tools used (Development tools - H/w, S/w): Excel.

Objectives of the project: Help the customer make an informed buying decision. Display exhaustive data about food dishes on Swiggy. Reduce complains and escalations. Increase sales. Improve product outreach.

Outcomes of the project: Yet to be determined.

Brief Description of working environment, expectations from the company: The work environment is quite relaxed. The company executives are supportive and extend help wherever necessary. At the same time, they do not mouth feed you and encourage you to find solutions to problems on your own. You have a very high ownership on your project and are free to make recommendations with respect to the processes involved. They follow a pretty straight forward open door policy.

Academic courses relevant to the project: Marketing Research (Probably? I don't know since I haven't taken it. The project was a very MBA oriented project. Really liked working on it though).

Name: Taabish Alam (2014A8PS0848G)

Student Write-up

Short Summary of work done during PS-II: Analyze Swiggy's Trade Discount Properties to obtain key actionable insights.

Tools used (Development tools - H/w, S/w): MS Excel

Objectives of the project: Provide Insights Regarding Trade Discounts

Outcomes of the project: Data Driven Enabling of Sales Team.

Major Learning Outcomes: Analytics Practices

Brief Description of working environment, expectations from the company: Casual but competitive, interns are given substantial responsibility and independence to carry out their work.

Academic courses relevant to the project: Technical Report Writing

Name: Meghna Goyal (2014A5PS0775P)

Student Write-up

Short Summary of work done during PS-II: Rain operation and analysis: 1) update daily/weekly/monthly rain reports.

- 2) The team's job was to work on experiments to reduce order loss in rain
- 3) Assist teams in design, rollout, tracking, impacts and scaling up experiments
- 4) Reporting and analysing traffic data
- 5) Lining up experiments on Pan India level
- 6) Analysing performance of swiggy across rain periods

Tools used (Development tools - H/w, S/w): SQL-Qlikview, MS-Excel, Prestodb, MS-Office

Objectives of the project: Prevent order loss during rains

Outcomes of the project: Reduced order loss

Developed consolidated set of learning for monsoon period

Conceived, designed, roll out, scaleup of experiments

Finding on ground and product level solutions and scale them

Major Learning Outcomes: Learnings

- 1) the functioning of an online delivery system
- 2) Coping with high intensity work environment at a startup
- 3) Hard skills and soft skills required in a professional setup

Brief Description of working environment, expectations from the company: The environment was very tough to cope with initially due to immediate expectation of results, so everything was an on the job learning, learn new software while working on code on the same to obtain results required by my manager was a challenge. Contrary to my expectation of an organized work requirement, there were simultaneously many projects ongoing that I had to learn to manage well. Clear Communication from the company is also expected but was haphazard and a tad ill managed. Office hours are stretched more often than not.

Academic courses relevant to the project: Principle of Economics.

PS-II Station: CA Technologies, Bangalore

Faculty

Name: Raja vadhana P

Comments: Expectations from industry: Shorter Learning curve, Approach any problem statement in professional way, To try problem solving proactively.

Student

Name: Arvind (2014A7PS0195H)

Student Write-up

Short Summary of work done during PS-II: Mainly understanding one of their products- what it does and how. And deploying that particular product in different kind of production environments such as docker, kubernetes, etc.

Tools used (Development tools - H/w, S/w): Docker, Kubernetes, Json

Objectives of the project: Deploy the product in Kubernetes environment

Outcomes of the project: Clients favouring Kubernetes environment could deploy this product using the scripts i have written during the ps.

Major Learning Outcomes: Teamwork, Working of Software industry(atleast to some extent), Getting to know about latest technologies(like docker,kubernetes).

Brief Description of working environment, expectations from the company: Very good environment for one to grow and learn about something. Staff is highly supportive and always encourage you to come to them regarding professional or personal issues.

Academic courses relevant to the project: Computer Networking, OOPs, C, OS

Name: Jatin Lalwani (2013B4AA0682H)

Student Write-up

Short Summary of work done during PS-II: Validation/Automation of Alerting & Monitoring System for Online Payments system, development of a springboot application which includes new features to be integrated into the product. New feaures like a login and signup page for the application, querying the database to check for duplicates and edge cases, a better UI for updating the configuration values, etc

Objectives of the project: Software development

Outcomes of the project: new functionality added to the product

Major Learning Outcomes: Backend Development in JAVA using spring framework

Brief Description of working environment, expectations from the company: Working environment was good, company provides all resources required for learning as well.

Academic courses relevant to the project: OOP- Object Oriented Programming

Name: Harshita Jhani (2013B2AA0867H)

Student Write-up

Short Summary of work done during PS-II: Finished the complete validation of an Alerting and Monitoring System for online Payments and delivered it for production. Wrote unittest test cases in python as a part of the Automation framework for the Monitoring System. Worked on a Data Analytics project involving the use of Apache Flume to consolidate logs collected from multiple servers and sent to write in a Kafka Bus.

Tools used (Development tools - H/w, S/w): Oracle SQL, Linux, Apache Flume

Objectives of the project: Validation of an Alerting and Monitoring System.

Outcomes of the project: Validation

Major Learning Outcomes: Competency in SQL, Linux.

Brief Description of working environment, expectations from the company: Flexible timings, decent working environment.

Academic courses relevant to the project: OOP, DBMS

Name: Karthik Masalchi (2014A7PS0045G)

Student Write-up

Short Summary of work done during PS-II: In one project we built a search engine with features like autocomplete, search history based suggestions, multi-lingual and misspelled-word interpretation. In another project, we built a Chatbot.

Tools used (Development tools - H/w, S/w): ElasticSearch, AngularJS, Kibana, Java, DialogFlow, Rasa

Objectives of the project: To build a Search Engine POC and Chatbot

Outcomes of the project: Done a Search Engine POC and research and little development in Chatbot project.

Major Learning Outcomes: Got introduced to Elastic Search, NLP, Chatbot, AngularJS and enhancement in knowledge of Java, Javascript, API.

Brief Description of working environment, expectations from the company: Company expects basic knowledge of programming, javascript is highly preferred, especially AngularJS or Angular. Besides, the company uses Java, so a basic knowledge of Java is also required to perform well. The working environment is very good and professional. Mentors are resourceful and managers are very helpful.

Academic courses relevant to the project: Object Oriented Programming, Machine Learning.

Name: Mohit Prasad (2014AAPS0227H)

Student Write-up

Short Summary of work done during PS-II: Did two project 1) PoC on Smart Search based on Elasticsearch and Angular js a data retrieval model with some advanced features of autocomplete, multi-language support, search history support and auto correction.2)ChatBot using an on premise conversation engine and designing the dialogue manager and implementing the business logic and training the model, automating the testing and updating the model.

Tools used (Development tools - H/w, S/w): JAVA, Angular js, Elasticsearch, Machine Learning, NLP

Objectives of the project: Smart-Search and Virtual Analyst

Outcomes of the project: implemented both the ideas and working models.

Major Learning Outcomes: New Technologies, Team-work, Corporate life.

Brief Description of working environment, expectations from the company: No work stress, friendly mentors and managers and a healthy working environment. Time is given to study about the new project and helpful staff and lot of inter teams interaction which adds to the learning experience.

Academic courses relevant to the project: Data Mining, Information Retrieval, Machine Learning, Artificial Intelligence, OOP

PS-II Station: Central Leather Research Institute (CLRI), Chennai

Student

Name: S S SASIDHARAN (2014A1PS0754G)

Student Write-up

Short Summary of work done during PS-II: The approach employed towards obtaining the final result was done in two parts. The first stage involved the prediction of biomass concentration in the reactor with the heat flux values as input. Once this model was valid, a suitable model too link biomass and product concentration was chosen(Luedeking-Piret Model). The theoretical values of biomass were then used to predict the product concentration.

Tools used (Development tools - H/w, S/w): OriginLab(data analysis software), UV Spectrophotometer, Bioreaction Calorimeter, Centrifuge;

Objectives of the project: To establish a model that would allow us to predict instantaneous product concentration in the reactor, using heat flux as an input.

Outcomes of the project: A suitable model to predict product concentration from heat flux values was developed. There were some intervals of the experiment where model showed some deviation from the actual values and further work is required to make it more accurate.

Major Learning Outcomes: During the course of the project, I learned various assay techniques to determine concentrations. I gained insight into the mechanism of bio polymer formation in microorganisms and the conditions at which they occur.I also learned the approach to model experimental data.

Brief Description of working environment, expectations from the company: The Institute provides a good work environment throughout the course of the project. They provide valuable feedback and assistance with the project. I got to work with tools such as Bioreactors, which are important components in the industry. There is also significant experimental exposure during the project. Most of the projects here are based upon problems encountered Industrially and hence are very important . The Institute therefore, expect significant progress in the work that you do.

Academic courses relevant to the project: Some of the concepts learned in Numerical Methods for Engineers(Chemical Engineering CDC) like data fitting, regression etc. were used in the project. These were useful while analyzing the data obtained from the experiments

Name: K. Sri Charan (2013B1A10827H)

Student Write-up

Short Summary of work done during PS-II: cellulose is extracted from agricultural wastes and the product is applied in leather finishing to overcome the grain defects in the leather.

Tools used (Development tools - H/w, S/w): Origin, MS Office

Objectives of the project: production of valuable product from agricultural waste and successful application in prominent industrial sector

Outcomes of the project: cellulose can be used in leather industry with its derivatives

Major Learning Outcomes: How leather is manufactured. How to work in Research and Development sector.

Brief Description of working environment, expectations from the company: CSIR-CLRI gives a friendly environment to work. The progress is constantly checked by the mentors. As the institute is related to leather sector any project will be related in any way with leather.

Academic courses relevant to the project: Separation process-1, separation precess-2

PS-II Station: Centre for Artificial Intelligence & Robotics, Bangalore

Student

Name: Tanmay Saxena (2014A4PS0342P)

Student Write-up

Short Summary of work done during PS-II: Worked on the Unsupervised Domain Adaptation (a concept of Deep Learning), created a convolution neural network in caffe and using the bvlc_reference_caffemodel to train it, implementation of Wasserstein-1 metric as loss function using the concept of wasserstein generative adversarial network to reduce the distribution distance between the target and the source domain.

Tools used (Development tools - H/w, S/w): Caffe, Tensorflow

Objectives of the project: UNSUPERVISED DOMAIN ADAPTATION USING WASSERSTEIN METRIC

Outcomes of the project: The accuracy of Domain Adaptive Network was 84.7% and that of Residual Transfer Network was 73.7%.

Major Learning Outcomes: Wasserstein Metric outperform other distribution distances to solve the problem of domain adaptation.

Brief Description of working environment, expectations from the company: The organization is a place which broadens your thinking level. Everyone here is working on some new cutting edge projects. Since the organization is the part of Defence Research and Development Organisation, a police verification is a must to enter. The scientists at the place are very helpful and expect you to come up with innovative ideas and solutions to the problem. You can find scientists working in multiple domain like geo-spatial mapping, deep learning, image processing, signal processing, robotics etc.

Academic courses relevant to the project: Machine Learning.

Name: A.Rajashekhar Reddy (2014A4PS0133H)

Student Write-up

Short Summary of work done during PS-II: Trajectory Planning of a four wheeled Steered Robot.

Objectives of the project: To develop a trajectory for a given path for a four wheeled steered robot

Outcomes of the project: Developed equations for the trajectory of the robot

Major Learning Outcomes: Learned about Robotics and its different fields and applications

Brief Description of working environment, expectations from the company: Work environment is good. Support from the mentors is less relatively. Timings of the institutions is lenient. Overall a good experience.

Academic courses relevant to the project: Could add a new course about robotics.

Name: Sarthak Bisht (2014A4PS0338P)

Student Write-up

Short Summary of work done during PS-II: The project was mostly study oriented. Literature survey was done on Flapping Wing aerodynamics and design, along with studying CFD and FEA. At the end, some simulations on OpenFOAM were performed for the final presentation

Tools used (Development tools - H/w, S/w): OpenFOAM, GNU-Octave

Objectives of the project: Study of the aerodynamic mechanisms involved in flapping wing flight, from a computational perspective

Outcomes of the project: As the project was study oriented, the outcomes were mostly in terms of knowledge and skills acquired.

Major Learning Outcomes: Computational Fluid Dynamics, Finite Element Analysis, Fluid Structure Interaction

Brief Description of working environment, expectations from the company: Trainees are more-or-less confined to a training room, provided with a desktop (without internet) with either windows, debian or ubuntu. Commercial software like Matlab and Adams are available. Hardware related work is not

possible as the workshop is not accessible. Beefy systems, mostly tailored to parallel processing on GPUs, are provided if required for the project work. The PS centre is suited to AI, machine learning etc related projects.

Academic courses relevant to the project: Fluid Mechanics, Numerical Fluid Flow and Heat Transfer, Computational Fluid Dynamics, Finite Element Method

PS-II Station: Cerner, Bangalore

Student

Name: Kalyan Devanaboyina (2014A7PS037P)

Student Write-up

Short Summary of work done during PS-II: I have been an integral part of Cerner Smart Health team. I contributed in UI design changes of application. Helped in generating reports from the data collected. Created a new database based on new requirements. Created a chat bot model which can be part of the application in future.

Tools used (Development tools - H/w, S/w): HTML , JavaScript , PHP , Java , Android Studio , Node Js

Objectives of the project: To develop an application which is helpful in performing health checkup of students and generating reports.

Outcomes of the project: Made UI changes depending on latest needs . Performed bug fixes based and integrated those changes in new update. Helped in generating reports from the data collected.

Brief Description of working environment, expectations from the company: I have been a integral part of Cerner Smart Health team for past 6 months . They expect me to perform the tasks given to me in given duration . We get requirements from clients regarding the functionality they need in the app . Our manager evaluate the needs and spreads the tasks among the team to perform it .We make the neccessary changes and integrate them in the new update.

Academic courses relevant to the project: Data Structures and Algorithms , Object oriented Programming , DBMS , Computer Networks

Name: Sai Vishal Muda (2013A7PS0095G)

Student Write-up

Short Summary of work done during PS-II: My work mainly revolved around the development of Cerner Smart Health(CSH) which is an app used to screen school children for health issues. This included the integration of Aadhar API to authenticate students while screening and club the health data with their

aadhar. Among other things included writing prepared statements for all the SQL queries in the app, optimizing SQL queries to reduce the response time, writing logic to display the summary of the child condition using the values given while screening. To research about Dialog flow and how it can be used to use speech to fill screening data in CSH.

Tools used (Development tools - H/w, S/w): Git, Atom, Android Studio, Xampp

Objectives of the project: To integrate Aadhaar Authentication API into CSH

Outcomes of the project: Aadhar API integration and major developments in the application

Major Learning Outcomes: Knowledge about full stack development and API integration.

Brief Description of working environment, expectations from the company: You are given ample amount of time in the beginning to get used to the project environment and the technologies being used. You are free to ask your mentor about anything. You are expected to be pro-active since the company expects high performance from Bitsians.

Academic courses relevant to the project: Object oriented Programming, Data Structures and Algorithms, Cryptography

Name: Prudhvi Raj Gundapu (2014A7PS054H)

Student Write-up

Short Summary of work done during PS-II: Software development , debugging and testing.

Tools used (Development tools - H/w, S/w): Java script, php, html, css.

Objectives of the project: Android app development.

Outcomes of the project: Application of Cerner Smart Health

Major Learning Outcomes: Technologies used here.

Brief Description of working environment, expectations from the company: Good working environment , but over crowded . Still if the manager is good and cool then you'll like the work and company both.

Name: Manal Dave (2014A7PS0120G)

Student Write-up

Short Summary of work done during PS-II: Web/Application Development on Android-based Hybrid App and Automated Testing

Tools used (Development tools - H/w, S/w): Languages - Java, JavaScript, PHP, SQL Other platforms: DurandalJS, Appium/Selenium, WebSQL and MySQL

Objectives of the project: To build an Android-Application, and test function using automated unit and functional testing

Outcomes of the project: Functional application, tested within requirements set for the team by the client, with Data security at database and application level

Major Learning Outcomes: Android Development, Automation, Teamwork, Data Security

Brief Description of working environment, expectations from the company: Not a difficult project. You get your device(laptop) from the company and then are briefed about working, rules and guidelines for the first two days. You will be allotted managers and to a team dedicated to a project. Challenges faced will be in terms of acquainting yourself to the requirements as compared to what you might have learnt previously. Team members are very friendly and will acclimatize you to the team. They help you all the way and make working there comfortable. Willingness to work hard and insistence to work will be rewarding and will lead to a good overall experience.

Academic courses relevant to the project: DSA, DBMS, Software Development in portable devices, Cloud Computing

PS-II Station: Cisco Systems (India) Pvt. Ltd - Embedded Systems, Bangalore

Student

Name: Lakshay Modi (2013B1AA0355H)

Student Write-up

Short Summary of work done during PS-II: The problem, though initially a seemingly unsurmountable one, is only a collection of simpler, easy-to-code smaller problems, that require some knowledge to begin with. A lot of time was invested into learning the basics of what we were going to do, including learning the libraries, the program architecture and the corresponding nuances that it encompasses. The time spent on programming the solution was not too much, however, it too demanded some thinking. The majority of time was however spent in testing the code. Since there was no simpler way to ensure the full working of the code base, regular trips with the bot were made, in order to test every phase of the solution build. The solution we made was broken down into the following phases : Depth Map generation, 2D Mapping, Localisation, Implementing static transforms, Waypoint navigation, Obstacle detection and avoidance, Autonomous functionality, IoT based control.

Tools used (Development tools - H/w, S/w): Turtlebot

Objectives of the project: Inventory management and wifi mapping

Outcomes of the project: ¢ Depth Map generation

¢ 2D Mapping

¢ Localisation

¢ Implementing static transforms

¢ Waypoint navigation

¢ Obstacle detection and avoidance

¢ Autonomous functionality

¢ IoT based control

Major Learning Outcomes: Learnt ROS (robot Operating System) from scratch.

Brief Description of working environment, expectations from the company: Everyone at cisco is friendly, you don't use sir/ma'am to address anyone, which makes it more cool. People will sit for hours if you have some doubts or stuck at some point in the project. Now let me take you through the lab (called thingQbator) i'm working at. It's a IoT makerspace where you can build your idea into a prototype. It's a dream place for an engineer. You can build stuff (you can burn stuff too :P), you can literally do whatever you want. From what i felt when i entered this place, i can say that it's a second BITS. Flexible timings, less workload, work life integration and what not.

Academic courses relevant to the project: C, ML, and some basics of EEE F111

*PS-II Station: Cisco Systems (India) Pvt. Ltd - Machine Learning,
Bangalore*

Faculty

Name: Raja vadhana P

Comments: Expectations from industry: IoT, Android Mobile App development, Robotics OS
Irrespective of the degree program students can be equipped with knowledge on Data Analytics,
Automated Testing methods, Machine learning, Cloud computing and Network security basics.

Student

Name: Vedant Mishra (2013B2A70455P)

Student Write-up

Short Summary of work done during PS-II: Even though IoT is showing so much growth and has impacted so many fields, on ground implementation of it still requires to overcome certain challenges to produce results. Some major challenges are: • Cost • Scalability • Ease of installation • Interoperability • Privacy • Security The framework created in this project attempts to overcome these challenges by utilizing existing devices and technologies.

The project consists of three major parts:

1. Hardware and it's coding: The hardware was procured from external vendor. It was then coded to be configured by mobile app and then controlled and monitored using API's exposed by CAM.
2. Cisco Asset Manager setup: It is a Cisco proprietary software where asset properties, logic for monitoring and control was defined and several API's were exposed for mobile app.
3. Mobile App: An android app was developed which would fetch floor plan, device properties etc. from CAM for configuring IoT assets.

Tools used (Development tools - H/w, S/w): CAM, Android,AWS, Javascript H/w: Electrodragon Wi-Fi IoT Relay Board

Objectives of the project: The project aims to create a frame work for installing, configuring and real time monitoring of large number of IOT devices over multiple geographical locations in a easy, reliable, scalable, cost effective and secure manner.

Outcomes of the project: In this project the basic framework has been created. The framework comprises of Electrodragon Wi-Fi IOT Relay Board Based on ESP8266, Cisco Asset Manager and an android app. This can be modified for other types of IOT devices and sensors by replacing the Electrodragon module with appropriate module.

Some parts need modifications to improvise it. The interoperability has also been implemented. There are few areas which requires better abstraction to enable easy adaption for other kinds of devices.

Major Learning Outcomes: Learning:

Technical skills : 1. Hardware coding 2. App development 3. Cisco Asset Management Software Suite 4. Protocols such as MQTT, TLS etc.

Other skills : 1.Real world project planning and development 2. Gaining new insight and perspective in the field of Internet of things from experts at Cisco systems.

Brief Description of working environment, expectations from the company: The working environment was as follows:

1. Transparent & Open Communication: Our mentor was very open to us and took our advice regularly on the project.
2. Work-Life Balance: We were encouraged to do a lot fun activities along with our daily work.
3. Training & Development-Focused : Our internship allowed us to gain a lot of knowledge and perspective in the field of IoT along with getting experience in real world project planning and development.
4. Recognition for Hard Work : Our mentor recognized our hard work and praised us for it.
5. Strong Team Spirit: We felt a strong sense of team spirit while working in our internship.

Academic courses relevant to the project: None of the courses were directly relevant to the project. Coding learnt during Introduction to programming came in handy.

PS-II Station: Cisco Systems (India) Pvt. Ltd - Software Engineering, Hyderabad

Student

Name: Shreyas Shetty (2014A7PS0131P)

Student Write-up

Short Summary of work done during PS-II: Open source and version control system. Initial was migration of files from one vcs to another. Another involved OpenVswitch

Tools used (Development tools - H/w, S/w): Perforce, Git, OpenVswitch, mininet, virtualbox

Objectives of the project: Making things efficient for the team

Outcomes of the project: Migration of files successful

Major Learning Outcomes: Time management, communication

Brief Description of working environment, expectations from the company: Okay work environment, not much work for interns though. Limited expectations for future prospects.

Academic courses relevant to the project: Computer Networks, Operating Systems.

Name: Shashwat Vardhana (2013B5A70836H)

Student Write-up

Short Summary of work done during PS-II: Setup of perforce server, replica server, proxy and scripts created for handling of minor issues like memory left and informing when replica goes down

Tools used (Development tools - H/w, S/w): VNC

Objectives of the project: Setup Perforce for the company

Outcomes of the project: Perforce Setup

Major Learning Outcomes: Perforce functionality

Brief Description of working environment, expectations from the company: Work environment is very good. People in the company are very helpful.

PS-II Station: Ducere Technologies - Embedded Systems, Secunderabad

Student

Name: Kshitij Panse (2013B3A80479P)

Student Write-up

Short Summary of work done during PS-II: Pressure Sensors interfacing to determine fall risk in elderly people

Tools used (Development tools - H/w, S/w): Matlab, Python, Arduino

Objectives of the project: Fall Risk Parameter Calculation and Assessment

Outcomes of the project: Parameters for comparing balance stability calculated

Major Learning Outcomes: Team Work, communication skills

Brief Description of working environment, expectations from the company: Company is a startup and the type of work done is different and innovative. Take this PS only if you are serious to complete the work given by company

Academic courses relevant to the project: No pre-requisites

PS-II Station: Ducere Technologies - Pattern Recognition, Secunderabad

Student

Name: SRAVAN KUMAR PASUPULETI (2014A7PS0006G)

Student Write-up

Short Summary of work done during PS-II: Pattern Recognition for Gait analysis, Activity detection. Pattern recognition involves using K-means clustering, Dynamic time warping, Hidden Markov models.

Tools used (Development tools - H/w, S/w): Python, Android studio, Xampp

Objectives of the project: Pattern Recognition

Outcomes of the project: Gait Segmentation, Exercise peak detection, Activity detection

Major Learning Outcomes: Developing android application with server communication, learning python, and exposure to many machine learning algorithms and techniques.

Brief Description of working environment, expectations from the company: This is a start-up company and so the work which we do directly goes into the mainstream. A lot of scope to explore a start-up company. A chance to interact with different teams.

Academic courses relevant to the project: Machine Learning, Data mining.

*PS-II Station: EduPristine - Neev Knowledge Management Pvt. Ltd.,
Mumbai*

Student

Name: Lenin Gangwal (2014A3PS0193G)

Student Write-up

Short Summary of work done during PS-II: I built a machine learning model which predicts the probability of conversion of an incoming lead. I also built a chat bot for our website.

Tools used (Development tools - H/w, S/w): SKLearn library, Api.AI

Objectives of the project: The sales team should be able to choose the leads which have a better probability of being converted.

Outcomes of the project: Successfully built the model, as well as the chat bot.

Major Learning Outcomes: Got hands on experience in building complex projects while working in a team.

Brief Description of working environment, expectations from the company: The management was very poor. They did not seem to be interested in our work. Our manager hardly communicated with us. It would literally be weeks without him enquiring about how our projects are going on.

Academic courses relevant to the project: Computer Programming

PS-II Station: Edupristine, Delhi

Faculty

Name: Ashish Narang

Comments: Expectations from industry: EduPristine was founded in 2008 became a Premier Finance Training Provider around the world in a short span of time. Over the years the company grew from one vertical to five verticals- Finance, Accounting, Analytics, Marketing, and Healthcare. EduPristine has built a strong online platform and network of classrooms across India and caters to self-paced learning, online learning and classroom mode of learning. Student has developed a web applications to improve E-learning marketing and managing other internal operations. Interns at Edupristine, Delhi are expected to work on Angular JS, Python, PHP, WordPress etc. Organization look forward to have interns with excellent programming skills.

Student

Name: Ankur Kumar (2014A2PS0373H)

Student Write-up

Short Summary of work done during PS-II: The project's official title is TETRIS, a fully functional web application for EduPristine's official website.

The project comprises of both the front end and the back end including the payment gateways. The whole website is developed on Wordpress, which is on a local setup. Technologies used: HTML5, PHP, JavaScript, JQuery, CSS, WordPress. The title of the second project is NG-HARRY, a fully responsive web application developed on Angular 4. Angular 4 comprises of the typescript programming language.

Tools used (Development tools - H/w, S/w): HTML5, PHP, JavaScript, JQuery, CSS, WordPress, Angular 4, VSCode.

Objectives of the project: To develop an understanding about the web application development work.

Outcomes of the project: Got a complete exposure about the software development environment and industry. Meanwhile learning different skill sets in CS field despite being a Civil Engineering student.

Major Learning Outcomes: Angular 4, HTML5, PHP, JavaScript, JQuery, CSS, WordPress.

Brief Description of working environment, expectations from the company: EduPristine is an online and classroom training provider for international certifications in Finance, (CFA, FRM, PRM) Accounting, (CPA and CMA [4]) Analytics (Business analytics and Big data Hadoop), Digital Marketing, Project Management and Six Sigma. EduPristine is headquartered in Piscataway, New Jersey, USA and has served professionals in more than 40+ countries[5] all around the world; mainly in Middle East, Africa, Asia and United States. They have conducted more than 1 million man hours of quality training. The work environment is pretty good with friendly co-workers and helpful manager to help out ease your work

Academic courses relevant to the project: Programming in C

PS-II Station: EMC, Bangalore

Student

Name: Ashwin Daswani (2014A7PS0119P)

Student Write-up

Short Summary of work done during PS-II: Development of root cause analysis engine of the upcoming MARS product.

Tools used (Development tools - H/w, S/w): Apache Spark, virtual machine, eclipse.

Objectives of the project: Real time event correlation.

Outcomes of the project: Distributed computation of root cause in RCA engine.

Major Learning Outcomes: Distributed computation of root cause in RCA engine. Applied for a patent which provides method and apparatus for real time event correlation.

Details of papers/patents: Method and apparatus for real time event correlation. Provided 3 methods which will make the existing product workable in real time.

Brief Description of working environment, expectations from the company: Excellent work environment. My work was related to research and development but cannot say the same for all of my fellow EMC interns.

Academic courses relevant to the project: Dsa, oop.

Name: CHITRESH SHARMA (2014A7PS0121H)

Student Write-up

Short Summary of work done during PS-II: The present measures of automation and testing to test coverage and impact are not efficient. They are not good enough to detect various blind spots and to provide correct percentage of code coverage by execution of test suite execution. The automation

developer is unable to develop required tests to cover these blind spots. As a result the impact factor is low. Moreover, there are no measure of pre-checking for developers. A developer is unable to be certain of the coverage and the impact of his code at lower level. If there is such measure it will omit various cycles between the automation and testing team and the development team. Thus, if a developer is able to pre-check his code, there will be sufficient increase in efficiency and productivity of the product team.

Tools used (Development tools - H/w, S/w): python, mongodb, redis, gcov, lcov, makefile

Objectives of the project: To maximize impact factor and make effective test suite

Outcomes of the project: Developers will be able to know code paths that are not covered in automation, to do more testing, thereby reducing regressions. Test engineers will be able to write more effective tests and increase impact factor.

Major Learning Outcomes: Writing python scripts, designing database systems, working on databases, working with makefiles, using coverage tools, working on linux.

Details of papers/patents: Method and apparatus for real time event correlation. Provided 3 methods which will make the existing product workable in real time.

Brief Description of working environment, expectations from the company: Working environment is very flexible, especially in terms of time. They focus more on how effectively and efficiently you work rather than when you arrive or leave. Learning opportunities are immense, it depends on your willingness and how much you push yourself.

Academic courses relevant to the project: Database Systems, Operating System, Computer Programming, Data Structures and Algorithms.

Name: Roopam Vyas (2014A7PS0099G)

Student Write-up

Short Summary of work done during PS-II: The objective of the project is to automate the process of deploying an Avamar server. The current process requires a user to manually install the server and then configure all the network details by themselves, which not only takes a lot of time, but also is a very

tedious task. The project aims at creating a User Interface for the concerned audience, consisting of a form to take all required inputs from user, and then trigger the deployment script using a python script.

Tools used (Development tools - H/w, S/w): Jenkins, ATAP, Avamar, Django

Objectives of the project: To automate the deployment of Avamar Virtual Edition.

Outcomes of the project: Successfully created automated deployment procedure for AVE, which allows user to just submit one Django form and takes care of all the deployment process by itself.

Major Learning Outcomes: I learned about various Automation tools like Jenkins, ATAp, etc. I also learned about Web Development using Python Django Framework.

Brief Description of working environment, expectations from the company: The working environment of the company is really good. The colleagues are really helpful and patient.

Academic courses relevant to the project: OOP.

Name: Ayan Gupta (2014A7PS0142P)

Student Write-up

Short Summary of work done during PS-II: I performed read and write performance tests of many graph databases & verified the features they provide. I also worked on Kubernetes and docker and learned how to make microservices.

Tools used (Development tools - H/w, S/w): Cassandra, Spark, GraphX, DSE GraphFrames, Neo4J, Flink, OrientDB, ArangoDB, Kubernetes, Docker, Linux platform based Virtual Machines

Objectives of the project: To find the best graph database that fulfill our product needs.

Outcomes of the project: We found that the best graph database for our product is ArangoDB.

Major Learning Outcomes: I learned all the software I mentioned above and many new concepts of Database Management.

Brief Description of working environment, expectations from the company: The working environment is good. Colleagues are friendly. Facilities are also nice. Overall the company is nice.

Academic courses relevant to the project: Database Systems, Computer Networks.

Name: Abhishek Parekh (2014A7PS0072P)

Student Write-up

Short Summary of work done during PS-II: Worked in designing the next Generation SMARTS product - a network monitoring and analysis tool. Mainly worked on the DevOps part of deployment of microservices using Kubernetes as container orchestration tool for docker containers.

Tools used (Development tools - H/w, S/w): Docker, Linux

Objectives of the project: Kubernetes Deployment of Microservices

Outcomes of the project: Creating a Test and Dev environment for deployment of application

Major Learning Outcomes: Apache Spark, Cloud Computing, Virtualization, CI/CD

Brief Description of working environment, expectations from the company: Very friendly working environment lots of support from Alumni and Staff.

Academic courses relevant to the project: Computer Networks, Cloud Computing, DSA, OOP, Database Systems.

Name: Himanshu Arora (2013B2A80741G)

Student Write-up

Short Summary of work done during PS-II: My project was software development of VDI Plugin of Networker. I worked on feature development, bugs solving and escalations.

Tools used (Development tools - H/w, S/w): C++, C#

Objectives of the project: Feature development, bugs solving, escalations

Outcomes of the project: Solved cases which were of P1 severity

Major Learning Outcomes: learnt how things actually work at enterprise level

Brief Description of working environment, expectations from the company: So luckily I got into a very good teams, which made my things easy. working environment was just amazing in my case

Academic courses relevant to the project: DSA, OOP, DBMS

Name: Aman Garg (2014A7PS0129P)

Student Write-up

Short Summary of work done during PS-II: I was assigned to handle the expression engine module of the SMARTS - a root cause analysis engine for events occurring in networks. The existing code was in Java and Scala and scripting language used was Groovy. The project was purely on the development side. I, after thorough research on various cluster computing frameworks and databases, proposed suitable platforms for the expression engine. Also, I designed the architecture specifications including the expected code flow and functionalities supported. I restructured the previous sequential code to make it multithreaded and distributed environment compatible, thus reducing the time latency by a significant margin. Several other major algorithmic proposals were submitted by me which are still being incorporated in the product. Applied for a patent which is yet to be granted, as mentioned below.

Tools used (Development tools - H/w, S/w): Apache Spark, Scala, Groovy, Java.

Objectives of the project: To design and develop a real-time root cause analysis engine to be deployed over distributed framework as microservices.

Outcomes of the project: The latency in detection of root cause has been theoretically resolved to achieve near real-time analysis. Practically, The expression engine was scaled out partially to enhance calculations atleast X8 times faster than the existing product.

Major Learning Outcomes: Got familiar with scala and increased proficiency in Java. Cluster computing basics. Patent filing gave a lot of technical and higher level exposure.

Details of papers/patents: Submitted a patent on 'Method and Apparatus for Real Time Event Correlation' (Status: Pending) along with Ashwin Daswani(2014A7PS119P). The patent suggests several major algorithmic changes in the approach of existing root cause analysis engines in networks such as to make the whole process real-time or near real-time and scaling it out over a distributed, cluster computing framework to reduce latency.

Brief Description of working environment, expectations from the company: The company was generous in assigning a full time project to interns, giving them ample exposure to the corporate working.

Academic courses relevant to the project: Computer Networks, OOP, DSA.

Name: SANKALP JAIN (2014A3PS0346H)

Student Write-up

Short Summary of work done during PS-II: My work in the company focuses on developing Network Models using languages like Groovy, TOSCA, etc. for the Modelling Engine which is the micro serviceable component for the product called SMARTS++ which is an improvement over the currently existing Dell EMC product SMARTS to provide broader use of Auto-scaling Microservices, Database Persistence and Customization to the end-user and change the existing in-memory data storage to an actual graph database. We decided to go with Groovy further and then performed creation and testing of models/templates. Apart from this, I got the opportunity to build and execute the huge codebase through which I learnt the application and implementation of tools and frameworks like gradle, Maven, TestNG, JUnit, Eclipse, etc.

Objectives of the project: develop the architecture of network modelling engine for nextgen smarts.

Outcomes of the project: The main objective is to develop the modelling engine(Model Manager) component for NextGen SMARTS product. Collected the requirements from clients and then come for the scope on which we worked. Below it contains the abstract of these requirement tags.

Class Definitions:- The Model Manager will define class structures for each Entity. An entity can represent a component of a network/cloud/storage domain. The classes will be defined to support all

object-oriented features and yet it should be independently defined so that its entity types can be arbitrarily combined to form topologies.

Relationships and Reverse Relationships:- The Model Manager will define relationships that will bind entities to other entities. The relationship types will be defined in consultation with the modules that interface with the Model Manager such as Discovery Engine and Expression Engine. A class can define both Forward as well as Inverse relationship between entities to complete the relationship pair.

Relationship Sets:- The Model Manager must have the capability to specify one is too many and many is too many relationships between two entities through the relationshipSet keyword

Attributes :- The Model Manager will classify the attributes of the entities using the following keywords

- stored attributes will represent all attributes that are persistent in the persistence layer
- Constant attributes have values initialised during instance creation and cannot be changed
- propagated attributes represent values that will change owing to a problem or symptom with respect to the entity via relationships or relationship sets. These values may be computed and propagated based on external events.

Behavioural Model Attributes:- The Model Manager will store all propagated attributes of an entity as a separate data structure and will define methods to make it available to external interfaces

Object Model Attributes:- The Model Manager will specify a data structure that would contain all the attributes and characteristics of the entity. The Model Manager must provide the necessary interfaces to return only the object model based on queries. The Model Manager will return the attributes of the object model as a name-value pair

Building Entities and Relationships w.r.t Network Standards:- The Model Manager must provide frameworks to define Entities and relationships in accordance with the industry standards. For instance, a Cloud applications may choose to create the entities and relationships based on TOSCA standard and legacy switches/routers may define models based on YANG/NETCONF standard

Provision For Dynamic Modelling:- The model manager must provide REST-based interfaces to support Dynamic Modelling wherein an External GUI interface can create topologies on the fly and the model manager must be able to construct the entities and their relationships and form the object model

Web-Based Interface:- The model Manager must make available REST interfaces to query the Model Entities and relations for external web-based interfaces

Dynamic Restart:-The model manager must be able to restart itself as a service when a model changes dynamically.

Major Learning Outcomes: For me the learning outcomes are so many like some of them mentioned below:-
- Learn Professionalism
- improved communication skills
- developed the skills of time management
- learnt various new languages like :- groovy, toscala, scala, perl
- working experiences of various cutting edge tools.

Brief Description of working environment, expectations from the company: This company dell emc provides ample amount of opportunities for new interns. they provide good projects for us and so much to learn from team and from project as well. All the teammates are very helpful. Overall work culture is good but According to me this thing does not depends on the company rather I will say it will varies from manager to manager. They provide working flexibilities like work from home. To chill there are recreational places(24X7) where we can play indoor games like foosball, pool, billiards, carrom, chess, table tennis, etc. and also they provide facility to play outdoor games like cricket, basketball,etc. Work they gave me is as per my expectation. My project contribution towards the product which is an improvement over the currently existing Dell EMC Corporation product SMARTS to provide broader use of Auto-Scaling Microservices, Database Persistence and Customisation to the end-user is to develop the whole independent modelling engine component from scratch only using the glimpse of dependent model manager component from classic SMARTS. I learnt a lot from this practice school. Thank you PSD for providing us this opportunity

Academic courses relevant to the project: COMPUTER NETWORKS, OOP, DSA, COMPILER

Name: Suyash Gupta (2014A7PS0094H)

Student Write-up

Short Summary of work done during PS-II: My work was mainly in Automation testing. Used a framework called ATAP for HyperV automation.

Tools used (Development tools - H/w, S/w): ATAP, a C# based framework for automation

Objectives of the project: Complete HyperV Automation

Outcomes of the project: Was able to successfully run the existing script, and added some new features to the existing framework.

Major Learning Outcomes: Learnt C# and Automation Testing.

Brief Description of working environment, expectations from the company: Working environment at Dell EMC was very conducive. I got to learn about their huge array of products, explored a lot of new technologies, that i was unaware of before. Got a hands on experience of automation testing in particular, and testing in general.

Academic courses relevant to the project: None as of now.

Name: C Hemanth (2014A7PS0075P)

Student Write-up

Short Summary of work done during PS-II: Worked for the design and development of a Network Topology Discovery program for the purpose of a general Framework development. Assisted in the testing of the Topology code for effective development of the program. Performed a POC to determine the best way to use a Rule based framework for Anomaly detection. Developed the Database information loading module. Set up a deployment pipeline for real-time maintenance of program

Tools used (Development tools - H/w, S/w): Apache Spark, Drools, Java, Python, Groovy, Scala, Apache Jmeter, Concourse CI, ASL scripts, Apache Kafka, Apache Flink, ArangoDB, mPutty, RHEL, centos

Objectives of the project: Design and development of a Network Topology Discovery program for the purpose of a general Framework development

Outcomes of the project: Designed and developed a Network Topology Discovery program for the purpose of a general Framework development along with other things to assist in the overall development of the Framework, both from a usage and a development perspective.

Major Learning Outcomes: Current industry standards in using different software and how to use them

Brief Description of working environment, expectations from the company: The people in the company are very friendly and the work environment is very good. Expectations from the company were pretty high and we constantly had sufficient work to keep us busy. It was also not overwhelming all the time but there were a few sprints where we did receive more work than usual (which is to be expected). There isn't too much scope for growth, especially after the Dell merger.

Academic courses relevant to the project: Computer Networks, Big Data Analytics, Object oriented programming, Database Systems.

PS-II Station: Ericsson Global India Pvt. Ltd., Bangalore

Student

Name: Rajat Sancheti (2013B5A30537G)

Student Write-up

Short Summary of work done during PS-II: Project around Asp.NET Web Api, coding in C#

Tools used (Development tools - H/w, S/w): Visual Studio, a lot of git

Objectives of the project: Backend development for Ericsson's MediaFirst IPTV platform.

Outcomes of the project: Backend development for Ericsson's MediaFirst IPTV platform.

Brief Description of working environment, expectations from the company: Working environment quite flexible. Timings not rigidly imposed. Amount of work you have ultimately depends on your team, project and the nature of your mentor. Most projects may involve lot of coding, and they do tend to give time to catch up on required skills.

Academic courses relevant to the project: C Programming.

Name: esha singh (2014AAPS0297H)

Student Write-up

Short Summary of work done during PS-II: worked on a project in SDN department. it was troubleshooter interface which works in the control section of then SDN architecture .

Tools used (Development tools - H/w, S/w): python , BOOTSTRAP , graphviz

Objectives of the project: troubleshooting interface.

Outcomes of the project: product developed to be released for testing

Major Learning Outcomes: computer languages , SDN

Brief Description of working environment, expectations from the company: they should specify and take students with regard to their need in departments . mentor allotment should be better .

Name: Anjali Bavisetti (2014AAPS0247H)

Student Write-up

Short Summary of work done during PS-II: Developers require a new Image(base code) every time they start to work on a new TR. Building this image would take around 3 hours leading to inefficiency. We designed a server where the image was already built. Through socket programming any client could send the changes made to this server, where they were patched and the image would be built in 10 minutes. With the help of multi-threading we were able to connect multiple clients in parallel.

Tools used (Development tools - H/w, S/w): Python

Objectives of the project: To minimize the time taken to build a base code

Outcomes of the project: The image was built in around 10 minutes which would otherwise take 2-3 hours

Major Learning Outcomes: Socket Programming, Multi-threading

Brief Description of working environment, expectations from the company: No particular office timings.

Academic courses relevant to the project: Any programming language

PS-II Station: GGK Technologies - Data Analytics, Hyderabad

Student

Name: G.Venkateshwara Rao (2013B4A30902H)

Student Write-up

Short Summary of work done during PS-II: Data science and Machine learning. Analyzing and visualizing customer behavior from data and predicting churn for customers.

Tools used (Development tools - H/w, S/w): R programming, python

Objectives of the project: Predict churn for customers

Outcomes of the project: classification model based on transaction data and website activity

Major Learning Outcomes: effective handling of class imbalance, proper ML model building, prudent algorithm selection

Brief Description of working environment, expectations from the company: Very interesting and food working environment. Expecting more inputs from the company than present.

Academic courses relevant to the project: Machine learning, Artificial Intelligence, Statistical Inference and Applications.

Name: Manish Sharma (2014A3PS0181P)

Student Write-up

Short Summary of work done during PS-II: We started out with studying statistics and machine learning. Later on, we applied these concepts on kaggle datasets to get hands-on experience. After that we got projects to work on. My project was churn out prediction of VIP customers of an online fashion retailer. I handled the whole pipeline of predictive modelling including getting relevant data, data profiling, cleaning and processing, feature engineering and finally creating different machine learning models.

Tools used (Development tools - H/w, S/w): R, Python

Objectives of the project: Predictive modelling for e-commerce customer's churn out.

Outcomes of the project: Got good prediction accuracy from the classification model.

Major Learning Outcomes: Learnt statistics and machine learning and applied them on real data, handled the whole pipeline of predictive modelling.

Brief Description of working environment, expectations from the company: I was in the data science team which was very new in the company. So they initially put a lot of efforts in making us learn data science which was actually very helpful. And after that they wanted each of us to complete the POCs and that too with good prediction accuracies, so that they can showcase it to the clients ASAP. But overall, the learning was amazing.

Academic courses relevant to the project: Machine Learning, Data Mining.

PS-II Station: GGK Technologies - Mobile App Development, Hyderabad

Student

Name: Hemanth B (2014ABPS0942H)

Student Write-up

Short Summary of work done during PS-II: Development of Internal Application for Organisation. Online Examination

Tools used (Development tools - H/w, S/w): Angular 5, GoLang, PostgreSQL

Objectives of the project: To develop an Online Assessment System

Outcomes of the project: A working product

Major Learning Outcomes: New Technologies like Angular, Hosting, Web Network calls

Brief Description of working environment, expectations from the company: The working culture is awesome. Employees were given chance to learn new technologies without any pressure

Academic courses relevant to the project: DBMS

PS-II Station: GGK Technologies - Mobile Services, Hyderabad

Student

Name: Hemanth B (2014ABPS0942H)

Student Write-up

Short Summary of work done during PS-II: App development

Tools used (Development tools - H/w, S/w): angular 2

Objectives of the project: development of a platform to update and store employee data

Outcomes of the project: incorporation of new tabs on the employee database platform

Major Learning Outcomes: angular 2, devOps, database management

Brief Description of working environment, expectations from the company: friendly

PS-II Station: Here Maps - Data Structures, Mumbai

Student

Name: B.ANAND BABU (2013B2A30367H)

Student Write-up

Short Summary of work done during PS-II: osp rules,mapping the template

Tools used (Development tools - H/w, S/w): scala,angularjs,spring mvc ,tomcat,postgres

Objectives of the project: mapping the successfully

Outcomes of the project: mapping successful

Major Learning Outcomes: Scala,angularjs,springMvc

Brief Description of working environment, expectations from the company: not bad

Academic courses relevant to the project: OOPS

Name: Pankaj Agarwal (2014A7PS0013G)

Student Write-up

Short Summary of work done during PS-II: I helped my team Map Creation to migrate from existing system to a more efficient system.

Tools used (Development tools - H/w, S/w): Java, Groovy, OOP

Objectives of the project: To migrate towards a better and more efficient system.

Outcomes of the project: Successfully created the supports for required features in new system.

Major Learning Outcomes: Working with team, Testing codes, Debugging Code

Brief Description of working environment, expectations from the company: The working environment was too calm and very friendly. Everyone was supportive and ready to help. The project never got hectic and it was fun working on it.

Academic courses relevant to the project: OOP.

Name: Kartik Jain (2013B5A80642H)

Student Write-up

Short Summary of work done during PS-II: The following report talks about the working of the Product Validation Framework tool used by the Places team to validate map data. This report also covers the basic information on testing and debugging of the PVF tool to enhance its efficiency. Apart from this certain details on automated regression test have also been reported.

Tools used (Development tools - H/w, S/w): Java,python,tensorflow,drools

Objectives of the project: Validation.

Outcomes of the project: Product Validation by Rules.

Major Learning Outcomes: Rest services, machine learning algorithms, drools

Brief Description of working environment, expectations from the company: Great working environment but company can offer more in terms of creative and innovative work to students

Academic courses relevant to the project: OOPS, machine learning

Name: Umesh Pathak (2013B1A80805G)

Student Write-up

Short Summary of work done during PS-II: I developed a WebApplication to which served as a Visualization tool for a database.

Tools used (Development tools - H/w, S/w): Play framework, Scala, AngularJS, ProtoBuf, JavaScript

Objectives of the project: Develop a tool for visualization of a database on Map

Outcomes of the project: Successfully developed a WebApp which would help developers view and visualize database information on a map. This is essential for creating products for the company.

Major Learning Outcomes: AngularJS, Scala and Play Framework.

Brief Description of working environment, expectations from the company: The working environment is very good and encourages new ideas.

Academic courses relevant to the project: Object Oriented Programming

Name: Somesh Sanjay Paradkar (2014A7PS0166H)

Student Write-up

Short Summary of work done during PS-II: Was a good ps.. learnt a lot about software industry.. how things are done.

Tools used (Development tools - H/w, S/w): Angular 4 npm typescript JavaScript

Objectives of the project: To migrate here core modules in angular 4 from angular js

Outcomes of the project: 2 modules completely done

Major Learning Outcomes: Learnt a lot about front end development

Details of papers/patents: No patents

Brief Description of working environment, expectations from the company: Working environment was too good.. people were quite helpful.

Academic courses relevant to the project: Nothing

Name: Nikhil Vinay Sharma (2014A3PS0262P)

Student Write-up

Short Summary of work done during PS-II: Used Machine learning, DSA, OOP to predict parking in major cities

Tools used (Development tools - H/w, S/w): python

Objectives of the project: Predicting on street parkings

Outcomes of the project: parkings predicted in Here's system

Major Learning Outcomes: Learnt Machine learning in detail

Brief Description of working environment, expectations from the company: Nice culture, good work

Academic courses relevant to the project: DSA,OOP, OS, Machine Learning

Name: Chaitanya Gadodia (2014A3PS0177P)

Student Write-up

Short Summary of work done during PS-II: The Company is primarily a mapping company, I was a part of Map Creation team. They use deep learning to find Traffic Signs from the drive data, which is around 98% accurate as of today. So they need to do Image Review (manually checking whether Traffic Signs are accurate). My project was to automate this Process of Image Review by using just the previous accurate data. At first it seemed like a Supervised learning problem, so I tried various Supervised and Semi-Supervised Algo's focusing on unbalanced data to get accuracy of around 80-85%. Then I tried to scale my models of larger data sets using AWS, but there was not much change in the accuracy. So I began the project once again from scratch from a completely different approach to traverse the map using graph database Neo4j and generating Association Rules using FP-Growth to generate rules of accuracy varying from 100% to 70%. The rules with 100% accuracy are directly being incorporated in Auto-Code and the rest will be used to increase pace of Manual Image Review.

Tools used (Development tools - H/w, S/w): Python, R, Octave, Spark(PySpark), Amazon Web Services,UNIX, DB :[SQL, Mongo, Neo4j]

Objectives of the project: Predicting Traffic Sign locations and thus automating the process of Image Review.

Outcomes of the project: Was able to get Association Rules with accuracy ranging from 100% to 70%, the 100% accuracy rules will be directly incorporated in Auto-Code and the rest will be used to push the accuracy of Image Review.

Major Learning Outcomes: Implementing Machine Learning and Data Mining Algo's using R, Python, Pyspark. Deploying them on Amazon Web Services.

Brief Description of working environment, expectations from the company: Awesome environment pretty much everything(napping room,TT room, PlayStation) except for free food. Company is expanding and thus you get to learn about varied kinds of technologies and how the dynamics of a growing company works.They have been recently funded so they are flush with money so they entertain all kinds of innovative ideas and solutions.

Academic courses relevant to the project: Machine Learning, Data Mining.

Name: Ved Purohit (2014A8PS0440P)

Student Write-up

Short Summary of work done during PS-II: Testing and debugging of Product Validation Framework(PVF) tool, which is used for validation of location data. PVF is a web application which is to be used by the clients and the company to validate map data, which is in the form of xml files. I had to debug the business rules which were already present in the system and create new rules according to business requirements. There are rules specific to different types of products which are delivered. I worked on the rules specific to Places products and this version of the PVF has been released to production environment. Partial work is done on POI xml products.

Tools used (Development tools - H/w, S/w): Java, Hadoop, MapReduce, AngularJS

Objectives of the project: To develop the PVF tool such that it works as required for all types of products.

Outcomes of the project: Places xml products are being successfully validated by the use of PVF. Some rules specific to POI xml products have also been worked upon.

Major Learning Outcomes: Working of the PVF tool,Hadoop and mapReduce.

Brief Description of working environment, expectations from the company: The working environment at HERE Solutions India Pvt. Ltd. is very friendly and a lot of flexibility is provided when needed. The

mentors are really helpful. There are outings and parties from the company too. I expected to get the experience for working in such a company, seeing the work done by me being used by the company and developing my personality in the process. Almost all of the expectations were met by the company to the full extent.

Academic courses relevant to the project: Object Oriented Programming, DBMS.

PS-II Station: Here Maps - Distributed Data, Mumbai

Student

Name: Utkarsh Singh (2013B5A30620P)

Student Write-up

Short Summary of work done during PS-II: Development of web application for template mapping

Tools used (Development tools - H/w, S/w): JAVA, Oracle Database, Apache Tomcat

Objectives of the project: Development of product creation system

Outcomes of the project: Reduction of workload on development team

Major Learning Outcomes: Web Development

Brief Description of working environment, expectations from the company: Project provided was good

Academic courses relevant to the project: OOP, DBMS

PS-II Station: IDEaS - SAS - Analytics, Pune

Student

Name: Chankit Goyal (2014B4TS0950P)

Student Write-up

Short Summary of work done during PS-II: In HR data analysis project I have worked on different stages of recruitment processes so that we can control whole recruitment process by finding the probability of different stages. In Cognitive Analysis project we are controlling the interview process by preparing questionnaire and analyzing that test data with different analytical tools. In my last project I have worked on descriptive analysis of ROA/Care Department by controlling a large amount of data.

Tools used (Development tools - H/w, S/w): SAS

Objectives of the project: For project 1-4, the main aim was to control the whole recruitment process. For project 5, the main aim was to get the descriptive analysis of their client cases related to company products namely G2 and G3.

Outcomes of the project: Able to control whole recruitment process (including Interview process with the help of cognitive analysis) with the help of historical data and SAS tool.

Major Learning Outcomes: SAS (Basic Level), Machine Learning (Regression).

Details of papers/patents: One Case study related to Logistic Regression Project is accepted by PS Instructor to use in data mining course.

Brief Description of working environment, expectations from the company: The company was good in all aspects.

Academic courses relevant to the project: Data Mining, Machine Learning (only Regression not neural network), Statistical Inference and Applications, Probability and Statistics.

Name: utkarsh vaish (2014A7PS0038G)

Student Write-up

Short Summary of work done during PS-II: I am currently working on reducing the manual work in recruiting a new candidate for company in any department using Natural Language Processing. Using POS Tagging and various APIs related to that, we extracted various informations from candidate's resume

Tools used (Development tools - H/w, S/w): Spring mvc, Selenium, junit, Rest, JPA

Objectives of the project: Automating the process of Recruitment.

Outcomes of the project: Successfully deployed on production side

Major Learning Outcomes: End-to-end Web development, Natural Language Processing, Test driven development.

Brief Description of working environment, expectations from the company: Colleagues are really helpful, open door environment, everyone is approachable, Full training before start of project, Mentor assigned to help with the project, treatment like an employee, flexible timings

Academic courses relevant to the project: Information retrieval, OOPS, DBMS

PS-II Station: IDeaS - SAS - Software Development, Pune

Student

Name: valla kurmanadha rao (2014A8PS0432G)

Student Write-up

Short Summary of work done during PS-II: My work at IDeaS is mainly designing an online responsive web application for employee engagement survey which is currently conducted in excel sheet. So, I am designing application In which employee can rate and rank the feedback aspects and can view the reports in bar diagram And Pie chart. Main objective of application is to make the survey available all the time and report the required data in pictorial format. This Application makes the survey easy to conduct and saves a lot of time for the managers and Employees.

Tools used (Development tools - H/w, S/w): 1.Front-end: HTML, CSS, JS, JQuery, Twitter™s bootstrap. MDBootstrap, etc.

Objectives of the project: continuous feedback survey

Outcomes of the project: continuous feedback survey

Major Learning Outcomes: The first thing I learnt is writing efficient and readable code on production level is an art in which I started developing interest. It also taught me to understand the complete flow of application which makes a good programmer. Effective Googling is also a must needed skill for a programmer. Finally I got to learn technical frameworks like spring boot and JPA and spring security and other protocols like LDAP and filters like Waffle. As the company strictly practices agile methodology, now I know the value of Test Driven Development and daily scrums and weekly catch ups.

Brief Description of working environment, expectations from the company: agile methodology is followed . Safe environment.

Academic courses relevant to the project: oops,DBMS

PS-II Station: IMI Mobile Data Analytics, Hyderabad

Faculty

Name: Raja vadhana P

Comments: Expectations from industry: Major work related to Analytics. Students are expected to learn about various concepts and tools related to data analytics. Knowledge of Java, CSS is helpful for some projects

Student

Name: Bhavesh Gupta (2014A3PS0226H)

Student Write-up

Short Summary of work done during PS-II: Created multiple web pages for the product, poc of screen-share using browser. Major work involved front-end development so learnt JAVASCRIPT, AngularJS, JQuery, HTML, CSS, Gulp, Chrome-internals, Node.js, Bootstrap, Semantic UI.

Tools used (Development tools - H/w, S/w): JAVASCRIPT, AngularJS, JQuery, HTML, CSS, Gulp, Chrome-internals, Node.js, Bootstrap, Semantic UI

Objectives of the project: Real-time communication using WebRTC

Outcomes of the project: Creating the product website

Major Learning Outcomes: JAVASCRIPT, AngularJS, JQuery, HTML, CSS, Gulp, Chrome-internals, Node.js, Bootstrap, Semantic UI

Brief Description of working environment, expectations from the company: The project is one part of research and development efforts done by the company, it hopes to create and increase in sales of the product as a standalone project and also increase the capability of the existing products. The project can be great boon for providing a lot of insight in computer networks and AI features.

Academic courses relevant to the project: Digital Image processing, Data structures and algorithms.

Name: Vinay Dargar (2013B4A30164G)

Student Write-up

Short Summary of work done during PS-II: I worked on software development on Android, Fullstack Web Development, and prototypes, for the company's IMIchat service platform. Worked on the Android SDK for the platform, played a part in product management decisions, and implemented proof-of-concept designs with IBM Watson, Android features, and web portals.

Tools used (Development tools - H/w, S/w): Android, Java, Python, Flask, SQLAlchemy ORM, MSSQL, HTML, CSS, Javascript/JQuery.

Objectives of the project: To work on adding features and progressing development of the company's service platform and offerings

Outcomes of the project: Was able to provide completed solutions to points of interest on the company's roadmap, and provide input in various sprint cycles for software dev as well as product management.

Major Learning Outcomes: I spread my time into multiple technologies and got the opportunity to be familiar with all of them in an industry level setting, touching a large variety of topics in a typical software engineer's role.

Brief Description of working environment, expectations from the company: IMIMobile is medium sized company, with reasonable expectations. My team (IMIchat product management/software development) is very relaxed and provides a great environment to work on skills you want to improve, no fuss, no strict deadlines, friendly mentors, relaxed expectations of work timings.

Academic courses relevant to the project: Computer Programming, Object Oriented Programming, DBMS.

PS-II Station: JDA Software Solutions, Bangalore

Faculty

Name: Vineet Garg

Comments: Expectations from industry: Students completed variety of internship projects in the area of retail and supply chain management software development and testing. Software included Java Script, Java, and C/C++. Domain involved web software development.

Student

Name: Sasank thumati (2013B4AA0799H)

Student Write-up

Short Summary of work done during PS-II: Validation and testing using junior and developing java based fitness environment for acceptance testing

Tools used (Development tools - H/w, S/w): Fitness, junit, elk, toad, postman

Objectives of the project: Code coverage testing, installer testing, end to end testing

Outcomes of the project: Xsl, java coverage increased by 30% and installer tested and developed fitness end to end testing

Major Learning Outcomes: Java, junit, Oracle dB, fitness

Brief Description of working environment, expectations from the company: Validate the routes, unit testing xsl and java, installer testing drop 14,15, fitness end to end testing

Academic courses relevant to the project: Oops

Name: saketh varma (2014A8PS0397H)

Student Write-up

Short Summary of work done during PS-II: Developed a query system and UI for Jenkins.

Tools used (Development tools - H/w, S/w): Groovy, Java, Sql, Javascript, Jsp

Objectives of the project: To develop a Jenkins query system that lets employees see all the required data at one place.

Outcomes of the project: Scope to develop more elegant UI and integrate the queried data with machine learning and predict the job failures beforehand.

Major Learning Outcomes: Learned to develop a complete web application.

Brief Description of working environment, expectations from the company: Not that particular about in and out timings and the work is not at all challenging so we get a lot of free time .Overall the place is good for non IT students to get hands-on experience in coding and expose to IT culture.

Academic courses relevant to the project: Oops

Name: Kunal Parmani (2013B1A80846P)

Student Write-up

Short Summary of work done during PS-II: Demand Forecasting, Data Analysis and Cognos Reporting.

Tools used (Development tools - H/w, S/w): Toad, SQL, Python, Cognos.

Objectives of the project: To generate forecast results and to analyze the data given for prediction.

Outcomes of the project: Annual and Monthly Sales could be predicted and what trends and promotions to apply are known.

Major Learning Outcomes: Sql, Python, Data Munging and Analysis, learned Cognos.

Brief Description of working environment, expectations from the company: Helpful, Friendly and Kind

Academic courses relevant to the project: C-programming.

Name: Shivam Khandelwal (2014A2PS0498H)

Student Write-up

Short Summary of work done during PS-II: Website Development

Tools used (Development tools - H/w, S/w): Html, Css, Javascript, PHP, Mysql, WampServer

Objectives of the project: To develop a website for the Allocation Department to manage their employee skills and projects.

Outcomes of the project: Built the website completing all the objectives

Major Learning Outcomes: Learnt Web Development and languages mentioned

Brief Description of working environment, expectations from the company: Stress free environment

Academic courses relevant to the project: Web Development courses

Name: Sanjana Patil (2014A3PS0267P)

Student Write-up

Short Summary of work done during PS-II: Part of warehouse management department. Allotted project was based on continuous integration and involved building an automation to revert and fix changes. Tool building was based on Java and Git applications and learning of Jenkins interface for continuous integration

Tools used (Development tools - H/w, S/w): Git,Jenkins,Java,Scripts

Objectives of the project: Create and automation for finding commits causing failure of jobs by reverting and re-building

Outcomes of the project: Java implementation of the tool idea which worked to get changes corresponding to a failed job

Major Learning Outcomes: Git and CI working, Java implementations, API development

Brief Description of working environment, expectations from the company: Work environment is decently motivating although not much emphasis is given on learning. This again depends on the department you are working in. Company expects project outcomes that are set initially but not much pressure with regards to deadline

Academic courses relevant to the project: Object Oriented Programming, Data Structures and Algorithms.

Name: AYUSH VIJAYVARGIA (2014A5PS0818P)

Student Write-up

Short Summary of work done during PS-II: I was allotted Pre-sales department of the company, in which I was allotted the Manufacturing Planning(MPL) team.

My work was on supply chain , it included making dashboards and reports in Cognos for MPL products like Inventory Optimization, Enterprise Supply Planning and Factory Planner to increase its appeal and make it easier for the customer to observe their data patterns for future predictions.

Tools used (Development tools - H/w, S/w): IBM Cognos, SQL, Excel.

Objectives of the project: To make dashboard for the different customers of the company.

Outcomes of the project: Attractive dashboards made the company to forge contracts with the customers.

Major Learning Outcomes: Supply chain management.

Brief Description of working environment, expectations from the company: It was good.

Academic courses relevant to the project: Supply chain management, Database Management System.

Name: MAHIMA PRASAD KHUNTIA (2014A2PS0505H)

Student Write-up

Short Summary of work done during PS-II: Mostly helped the Automation Team of the Cloud Services Department. Developed a few minor scripts that checks server health of the company monitors and files in logging information. Created a major overhaul of the enable/disable script that helps the monitoring team in doing routine patchwork. All of it was done in batch script. Developed a log scanner in python which helped the maintenance team in quickly identifying errors during product installations.

Tools used (Development tools - H/w, S/w): PYTHON, BATCH SCRIPT, PHP

Objectives of the project: Scripting in Python and Batch script to automate patchwork and error handling.

Outcomes of the project: Developed a Log scanner that logs in the issues encountered during software installations and a script that automates the enable/disable of the company monitors.

Major Learning Outcomes: Hands on training of scripting languages and exposure to industry level applications.

Brief Description of working environment, expectations from the company: Working environment is quite good. Mentors are pretty helpful. Projects were quite involving as well. Depending on your proficiency in certain skills (scripting, web development, .NET) you can ask for more challenging projects.

Academic courses relevant to the project: Computer Programming, Data Structures and Algorithms.

Name: Lovish Batra (2014A1PS0670P)

Student Write-up

Short Summary of work done during PS-II: Automation of Services: Automated all the services provided in the Transportation Management Website.

Tools used (Development tools - H/w, S/w): C#, Visual Studio

Objectives of the project: Validation of the Transportation Services

Outcomes of the project: Validation of Transportation can be done automatically

Major Learning Outcomes: Experience with Software Development

Brief Description of working environment, expectations from the company: Working environment is the JDA is very good.

Academic courses relevant to the project: Object Oriented Programming

Name: Srajal Tiwari (2014A1PS0677P)

Student Write-up

Short Summary of work done during PS-II: Manual form filling, especially when it gets repetitive, can usually be made more efficient via automation, saving both time and manpower. Selenium is a testing framework which can be used to write functions, such that given the right parameters, they would perform small, but often repeated tasks like opening a URL, clicking a button, sending text, etc. On this framework, we have a program developed, which is uploaded on the server (thin clients). To this program, we provide two files- a properties file, and a test cases file. It is these files that I have worked on. The test cases file is in a comma-separated values format, and contains the steps to be performed (algorithm), along with the parameters- separately for each test case. The properties file is a text file that contains the values of the parameters supplied in the test cases file (URLs, text, element locations etc.). For each module, a separate couple of properties and test cases files must be prepared. For making it user-friendly, I have created a UI for this, linking the back end with the front end.

Tools used (Development tools - H/w, S/w): Selenium (test framework), Eclipse, Chrome

Objectives of the project: Automation of form filling and creating a UI

Outcomes of the project: With form filling not just scripted, but also user friendly (thanks to the UI I developed), employees at JDA will save countless hours of work, and focus their energies on more pressing demands. I did not know JS or Selenium before coming to JDA, but having used them in a project now, I think I have a better grasp of it.

Major Learning Outcomes: Working with Selenium Test Framework, Java, Javascript (Front End and Back End), Documentation

Brief Description of working environment, expectations from the company: At JDA, the working environment is nothing short of awesome. The managers are good, coworkers are nice and even the support staff is friendly- making it an agreeable workplace. The projects were delivered on time, relevant training was provided and the time limits were not very stringent. So even though I was new to testing, I faced no difficulty in picking things up. On the very first day, when the project teams were being allotted, I was told that we could pick up any project we wanted according to our convenience. There is something for everyone at JDA, whether you are an aspiring web designer, tester, or even if you are good at documentation- JDA has relevant projects. I have seen people who did not even know a bit of coding come here, start from scratch, complete their projects and get PPOs. Thus, if you are interested in testing, or a full stack designer who needs some practical experience to hone their skills, or just interested in getting an IT job, but are not much aware of the basics, JDA is the way to go.

Academic courses relevant to the project: None

Name: Nishtha Jain (2013B1A20240P)

Student Write-up

Short Summary of work done during PS-II: Demand Forecasting using Supply chain management, tools like Toad, MS Excel and Sql Queries.

Tools used (Development tools - H/w, S/w): Toad, MS Excel

Objectives of the project: 1. Study the sales history. 2. Analyze history. 3. Generate Forecast

Outcomes of the project: 1. Good understanding in Supply chain and Demand and Forecasting. 2. Command on Sql queries.

Major Learning Outcomes: Systematic & Efficient working which saves a lot of time and effort. Working on such a big scale project definitely increased my confidence and opportunity to have a good exposure

Brief Description of working environment, expectations from the company: Very healthy working environment. Employees help a lot. Although, does not have a good learning curve for every intern.

Academic courses relevant to the project: 1. Supply Chain Management

Name: Shashank Saurav (2014A1PS0609P)

Student Write-up

Short Summary of work done during PS-II: Cloud services Automation.

Tools used (Development tools - H/w, S/w): Mostly Batch Script, Python

Objectives of the project: Cloud Automation

Outcomes of the project: Sitescope enable/disable automated

Major Learning Outcomes: Batch Scripting, Work Ethics

Brief Description of working environment, expectations from the company: Working Environment is very good

Academic courses relevant to the project: None

Name: Shivansh Mishra (2014A1PS0504P)

Student Write-up

Short Summary of work done during PS-II: Developed Scripts & tools in PowerShell to automate certain tasks undertaken by the team at JDA on windows servers to increase their productivity.

Tools used (Development tools - H/w, S/w): Laptop, Visual Studio, Visual Studio Code , MS Office, Windows PowerShell

Objectives of the project: To Automate certain tasks such as reporting on server health as well as making tools for managing Windows Services, Scheduled Tasks & doing product updates on multiple windows servers remotely.

Outcomes of the project: Designed, Implemented & tested all Scripts and tools as per the requirements specified by my Manager and team.

Major Learning Outcomes: Learnt about the following:

- ¢ Organizational structure and about departments at JDA
- ¢ PowerShell & Automation standards for windows servers
- ¢ Learnt About Some basic Programming principles
- ¢ Documentation of projects and steps followed during implementation in the industry
- ¢ Got Familiar with testing & Debugging
- ¢ Learnt about Version Control & Importance of Maintaining Proper Documentation of scripts

Brief Description of working environment, expectations from the company: The Work Environment is both Professional and Good. The Managers are very friendly and very approachable. The Project plan

was given to me in the beginning, so it greatly helped me prepare for the projects in advance. My mentor greatly helped me when i faced challenges doing the projects. That said, there is still a lot of bureaucracy involved and things get done slowly then they can be.

Academic courses relevant to the project: Computer Programming, Object Oriented Programming, Data Structures & Algorithms

Name: Hritik Soni (2014A2PS0480P)

Student Write-up

Short Summary of work done during PS-II: 3 Automation Projects were completed which were aimed to help the organization financially by reducing time spent on activities and effort required. The first Project was - Automated Log Analyzer, a tool to automatically read live oracle alert logs and make meaningful sense of information by plotting histograms which are sent by mail. The second Project was - JDA Server Manager, a centralized web interface for storing information on JDA customer for easy and organized access. The third Project, also the biggest one was - Upgrade Manager, a one-click solution for JDA migration procedure with automated error handling.

Tools used (Development tools - H/w, S/w): Python, PyQt5, Django, HTML5, CSS, JavaScript

Objectives of the project: Automating Tasks for saving time and effort

Outcomes of the project: All 3 Projects were successful and tested on dev environment. Once used they are guaranteed to save time.

Major Learning Outcomes: Rapid GUI Development, Python Expertise, Web Development Experience, Interface Design, Multi-threaded Programming

Brief Description of working environment, expectations from the company: JDA is the best organization I've every imagined culture-wise. There is no stress from anyone but ample opportunities to prove yourself, learn and be helpful to the organization. The company doesn't want you to necessarily do anything big but if you do something huge, then you will be appraised by every single person you encounter.

Academic courses relevant to the project: Data Structures and Algorithms, Operating Systems, Computer Networking, Object Oriented Programming, Databases

PS-II Station: JDA Software Solutions, Hyderabad

Student

Name: Vedant Pathak (2014A3PS0162P)

Student Write-up

Short Summary of work done during PS-II: Web based automation of pre-written test cases using the Selenium WebDriver framework. The Selenium WebDriver framework exists as a collection of Java libraries that use a browser's driver functions to control it and execute a given set of instructions.

Tools used (Development tools - H/w, S/w): Selenium WebDriver, Java, Excel

Objectives of the project: Test Cases had to be ported onto the framework i.e. be coded to run on the framework

Outcomes of the project: 12 successful test cases were written

Major Learning Outcomes: Knowledge of Web Automation.

Brief Description of working environment, expectations from the company: The work environment was satisfactory. I was given a proper cubicle with all the amenities required for the project. However, the company had no expectations from us, or at least that is what it felt like. There was no clear direction in which our internship there seemed to be heading. After the work had been allotted, there was very little supervision and mentoring offered to us. Good place to learn things at, but the work experience was terrible.

Academic courses relevant to the project: None

Name: Arjun Mahendru (2014A57PS067P)

Student Write-up

Short Summary of work done during PS-II: Selenium Testing and JUnit testing

Tools used (Development tools - H/w, S/w): Selenium framework, junit framework and eclipse luna

Objectives of the project: For automation and testing of functionalities

Outcomes of the project: Learnt about testing and its importance

Major Learning Outcomes: Testing, automation and basic coding skills

Brief Description of working environment, expectations from the company: Great for doing your own thing and prepare for placements but not very interesting projects and learning opportunities.

Academic courses relevant to the project: OOP.

Name: Eda Amos William Prasada Rao (2014A8PS0467H)

Student Write-up

Short Summary of work done during PS-II: Mobile App development

Tools used (Development tools - H/w, S/w): ExtJS , Android Studio

Objectives of the project: Develop Transportation Management App

Outcomes of the project: Created a new version of transportation management app 2017.2

Major Learning Outcomes: Code debugging in html using chrome , Java script language , OBD Diagnostics

Brief Description of working environment, expectations from the company: Learning Environment , Was able to learn a lot from superiors and also was invest my free time in learning important algorithms

Academic courses relevant to the project: OOP.

Name: thanuja (2013B1A10698H)

Student Write-up

Short Summary of work done during PS-II: Escrow of company product

Tools used (Development tools - H/w, S/w): Toad

Objectives of the project: Write batch scripts to run build for assigned project

Outcomes of the project: Delivering the client the escrow version of the product

Major Learning Outcomes: Software development life-cycle

Brief Description of working environment, expectations from the company: The student should be proactive in learning the know hows of the work in the team.

Academic courses relevant to the project: OOP.

PS-II Station: Jochebed Tech Solutions, Hyderabad

Student

Name: Ishaan Negi (2014A7PS0105P)

Student Write-up

Short Summary of work done during PS-II: The aim of my project was to find a way to communicate between two low-powered machines/sensors without opening ports. I started with benchmarking the MQTT statistics over the testing servers along with personally created system stats logger. After identifying the bottlenecks in the protocol, I created a custom protocol over MQTT making it more reliable, guaranteeing assured delivery.

Tools used (Development tools - H/w, S/w): Malaria (Open Source script), VMstat, MQTT opensource libraries, Python for back-end and testing done over cloud and prod server.

Objectives of the project: Communication without opening a port primarily through MQTT

Outcomes of the project: Successfully developed a customized protocol to solve the unreliability in MQTT

Major Learning Outcomes: MQTT library, Semaphores and Mutex, Python libraries for multi-threading

Brief Description of working environment, expectations from the company: The station was a startup 2 years old with mostly telugu speaking employees. I, on the other hand don't speak telugu. Infrastructure was sub-par with a lot of construction and hardware work going on in close proximity

Academic courses relevant to the project: Computer Networks, Operating Systems, Database Management System

Name: Mandalam Karan (2014A7PS0086P)

Student Write-up

Short Summary of work done during PS-II: Created a timed self logout page, a widget. Created a Wireshark like application which captured packets and analysed network statistics. Worked on creating an application level layer protocol based on MQTT.

Tools used (Development tools - H/w, S/w): JAVA, Eclipse, C, MQTT, Arduino, pcap, python

Objectives of the project: Creating an application to track network statistics.

Outcomes of the project: Completed the given tasks.

Major Learning Outcomes: Learnt about security aspect of networks. Learnt about MQTT.

Brief Description of working environment, expectations from the company: It was a newly established startup. Learning opportunities were good. Work environment was not what you would expect at an IT company. Do not expect any fancy bean bag like stuff if you opt for it.

Academic courses relevant to the project: Computer network, Object Oriented Programming

Name: Sai Pranay (2014A7PS0117G)

Student Write-up

Short Summary of work done during PS-II: Developed the backend code for storing data extracted from a vehicle into a database in server and at the same time send it to a mobile application. This data will be used in the training and testing of a machine learning model which was also implemented by me

Tools used (Development tools - H/w, S/w): obd2 elm, esp8266

Objectives of the project: Developing a machine learning model to predict driving patterns

Outcomes of the project: Developed backend system and a basic machine learning model

Major Learning Outcomes: Practical experience of a business establishment, hands-on experience on implementing machine learning

Brief Description of working environment, expectations from the company: A startup environment. Great people to work with. Not exactly the environment you would be seeing in an established corporate company

Academic courses relevant to the project: Machine learning, neural networks, computer networks

PS-II Station: JPMC CIB Operations - Robotics Automation, Bangalore

Faculty

Name: Shekhar Rajagopalan

Comments: Expectations from industry: All 4 stations: Basic Programming Skills, Excel Skills, Analytical Skills, Writing Skills, Corporate Etiquette

State Street & Goldman Sachs - Basic Finance courses

Genpact: Statistics

Student

Name: Prakhar Sinha (2014A3PS0261G)

Student Write-up

Short Summary of work done during PS-II: Automation of financial processes to increase efficiency and decreasing costs.

Tools used (Development tools - H/w, S/w): Automation Anywhere, Xceptor

Objectives of the project: To decrease the dependence on manual labour

Outcomes of the project: The project decreased human intervention in processes

Major Learning Outcomes: Process Automation

Brief Description of working environment, expectations from the company: Decent working environment. Monotonous work. Corporate culture.

Academic courses relevant to the project: C Programming

Name: KAUSTUBH TIWARI (2013B1A30780G)

Student Write-up

Short Summary of work done during PS-II: Robotics Process and Automation of Trades

Tools used (Development tools - H/w, S/w): MS Excel, Other 3rd Party Softwares

Objectives of the project: To automate and reconcile the trade activities

Outcomes of the project: Projects were successfully automated and reconciled.

Major Learning Outcomes: Corporate Culture, Automation scripting

Details of papers/patents: CClassified

Brief Description of working environment, expectations from the company: Decent working environment. Monotonous work. Corporate culture.

Name: Raviteja Yalam (2013B4A30426H)

Student Write-up

Short Summary of work done during PS-II: On a third Party Software tool, created Input Data Formats to extract required data from files, Message processors to process the data and Output Data Formats to get the desired outputs. And also created Translation Table to look up data for Input Data Formats if required.

Tools used (Development tools - H/w, S/w): Xceptor . Automation anywhere.

Objectives of the project: To Automate the Manual processing of files.

Outcomes of the project: Fast and accurate data processing

Major Learning Outcomes: Using Xceptor

Brief Description of working environment, expectations from the company: Working at JPMC has been a pleasant experience with a lot of people supporting you and helping you at every stage of the project and they have been patient enough to engage with us and clear our doubts. Company expects us to work with our full potential and focus there by contributing to the development of the firm.

Academic courses relevant to the project: CProgramming

PS-II Station: JPMC CIB Operations - Robotics Automation, Mumbai

Student

Name: Rushil Handa (2013B2A30787P)

Student Write-up

Short Summary of work done during PS-II: We were involved with the Robotics Division at JPMC. Our work was focused on maintaining and making the Bots which were being used to automate the repetitive processes that the Operations division of the bank.

Tools used (Development tools - H/w, S/w): Automation Anywhere Python VBSript

Objectives of the project: To increase the service efficiency by automating processes.

Outcomes of the project: Worked on 6 processes and on boarded their security to the in house vault.

Major Learning Outcomes: To collaborate with teams of people. Handling of automation software's.

Brief Description of working environment, expectations from the company: Great working environment and very collaborative culture focused on learning.

Academic courses relevant to the project:CP

Name: Avinash Kumar Rai (2013B3A30594G)

Student Write-up

Short Summary of work done during PS-II: My PS2 was in robotics department at JPMC Mumbai. Got exposure to tools like Xceptor, Automation Anywhere. I worked mostly on Xceptor. Xceptor is a tool which has been introduced at JPMC to automate logic base processes in Excel Sheets. It is slowly replacing VBS because it is more robust than VBScript.

Tools used (Development tools - H/w, S/w): Xceptor, Automation Anywhere, VBScript

Objectives of the project: Automating logic based processes

Outcomes of the project: Reducing the number of full time employees required to do certain tasks by automating the process

Major Learning Outcomes: Xceptor, Automation anywhere

Brief Description of working environment, expectations from the company: We were not treated as mere interns at JPMC and were handed projects similar to full time employees. People here are very helpful specially our BITS seniors who are now working full time here.

Academic courses relevant to the project: None

Name: Sunita Bugalia (2014B5TS0968P)

Student Write-up

Short Summary of work done during PS-II: My Primary role was of Access Manager, although i did work with Developers too for exploring myself and boosting up my developing skills. In Access Management Team, our basic task was to Provision System IDs as required by Teams for their current projects or coming up projects. We were also responsible for troubleshooting access issues as well for raising Application Specific access. In developing team, i did automate a process for Change Management Team. I did work for around 1 week with Development team to complete this project.

Tools used (Development tools - H/w, S/w): Automation Anywhere Tool, WIN Automation Tool

Objectives of the project: To provision access and its troubleshooting as required.

Outcomes of the project: I did automate several process of my Team also in which i worked to save manual Efforts. We also did manage a Share Point where we kept all access with systems IDs ready for all 2018 Projects. So that we are not short of time for Project to go live at the last moment.

Major Learning Outcomes: 1. Automation of Several Process Using Tool Automation Anywhere Tool.

2. How Accesses and Security works in Bank like JP Morgan.

Brief Description of working environment, expectations from the company: Overall it was quite good and satisfactory working environment or i should say a lot better then what expected. I did get a lot to develop in my personality as well as Academics. I did get to learn Professionalism, Decision Making

during critical time and Time Management the most important factor. It also helped me teaching a lot along with how to talk to senior people, way of interacting with senior people during meetings or in Person.

Academic courses relevant to the project: None

Name: Milaan Vigraham (2014A8PS0442P)

Student Write-up

Short Summary of work done during PS-II: Coded and upgraded bots using Automation Anywhere software for the firm, for use globally. These bots were used to replace the routine tasks previously done slowly and inefficiently by numerous human operators. We began by coding a simple bot to raise security clearances for new hires, so that our managers would not have to manually raise it for any future recruits after us. Then, we worked for a month on an ongoing project to improve password protection in all bots. Then, we worked on a project to upgrade bots to make full use of, and to be compatible with, the newer version of Automation Anywhere. Lastly, we worked on a project to improve disaster recovery.

Tools used (Development tools - H/w, S/w): The software tool used was the trademark Automation Anywhere. We also used Xceptor for a brief period, to manipulate Excel files in automation.

Objectives of the project: To improve the versatility and capability of the robotics department to better ensure the firm's dependency on, as well as ability to rely on, the robotics department to speed up and cheapen their work.

Outcomes of the project: We coded a few basic bots and upgraded or improved password protection features for about 15 bots/processes per intern.

Major Learning Outcomes: The structure and organisation of project development in an IT firm, and the practical applications of many advises previously given with regards to coding and coding etiquette (such as naming of variables etc). I also learned how to work as a team, and how to approach the user/client

side with patience and professionalism, code in such a way that it is user friendly, enable them to understand and use the coded final product, and get my work done.

Brief Description of working environment, expectations from the company: The company offered amazing transport services, fantastic healthcare facilities etc, but seems to have become saturated in the robotics sector, where growth is stalling (careers wise) and recruitment is dropping. Furthermore, the work is irregular and grossly overtime, which is not the case with other departments which are more professional and stick to JPMC's overtime pay policy if necessary, unlike Robotics, which is a new and slightly unprofessional department. However, the work is pretty good, and one gets exposure and learning experience. I have no expectations from the company with regards to recruitment etc.

Academic courses relevant to the project: C Programming (CS F111)

PS-II Station: LHD INDIA, Bhopal

Faculty

Name: Ashish Narang

Comments: Expectations from industry: LHD Bhopal, one of the leading restaurants in Bhopal since 1971. Interns have developed a food ordering website and an android app which aims at providing variety of services. Which includes electrical services, plumbing, home cleaning, Computer repairs, laundry and beauty services. Organization is open to take interns from an discipline with programming skills.

Student

Name: Aman Khantaal (2014A1PS0517P)

Student Write-up

Short Summary of work done during PS-II: I was involved in writing a variety of tasks ranging from writing backend APIs for their mobile and web apps, payment gateway integration for Pay Later segment (Lazypay and ePayLater), developing LHD's upcoming iOS app's authentication segment. It was a very good experience working with a small team of like minded tech enthusiasts who were excellent in their respective fields. Being inclined towards startup culture, I took NVC (New Venture Creation) course in my 2-1. I could actually see NVC discussions and presentations being implemented by people out here. When it came to web development, I was given responsibility of a complete module, be it front-end or back-end. This sense of freedom in the work allotment helped me in honing my skills from an all-round perspective. Furthermore, I was allowed to collaborate with ePayLater team not only for the technical integration but also for all the formalities needed to set it up. This gave me an opportunity of understanding how things worked beyond the technology associated with it, and also a chance to interact with ePayLater's CTO!

Tools used (Development tools - H/w, S/w): Python 3.6, Django-1.11, HTML, CSS, JavaScript, jQuery, Swift4 etc

Objectives of the project: Developing LHD Services module (Website and app APIs)

Outcomes of the project: Not only completed the main objective of the project, also got a chance to take care of multiple other IT-related segments.

Major Learning Outcomes: Better understanding of web development, payment gateway integrations and basics of iOS app development.

Brief Description of working environment, expectations from the company: I'll keep this short and crisp, just like the team size at LHD; Free Food (100% discount food coupons), sufficiently spaced office at a very accessible and posh location of Bhopal, accommodation + unlimited internet at accommodation provided by the company and a part of travel expenses incurred in commuting to and from the office are reimbursed at the end of every month. I had a better PS experience as compared to

my friends at tech-giants at Bangalore, Hyderabad etc when I see what I learnt and everything beyond it.
Thank you BITS. Thank you LHD!

Academic courses relevant to the project: Python Programming Language

Name: Pankit jain (2013B4A80638P)

Student Write-up

Short Summary of work done during PS-II: Developed a MULTI RESTAURANT FOOD ORDERING SYSTEM which is a web-based portal designed primarily to use for the food delivery in Bhopal with an online payment facilities. The portal allows to quickly and easily managing an online menu which customers can browse and use to place orders from more than one restaurant with just few clicks. Restaurant employees then use this portal to get real time order on the dashboard. Apart from this the project also involve developing a middleware to stop abusive request to LHD sever, and a real time chat feature using Slack api to increase collaboration by real time communication over chat.

Tools used (Development tools - H/w, S/w): Python, Django, Angular4, Slack API, Django Channels, Websocket,

Objectives of the project: The main objective of the project is to provide a new kind of food ordering website which give flexibility to the customers of ordering items from more that one restaurants

Outcomes of the project: A fully functional website for online food ordering.

Major Learning Outcomes: Full stack Web Development, Python Programming, Real Time Application

Brief Description of working environment, expectations from the company: nice and peaceful environment, organisation has provided me iMac for work.

Academic courses relevant to the project: Python Programming

PS-II Station: Media Iq Digital, Bangalore

Mentor

Name: Rahul Anand

Designation: Senior Analyst

The students are very confident and do not hesitate to ask questions at all. This makes them a great addition in team meetings where asking questions which might on the surface seem simple - but have a lot of subtleties attached to it. The communication and interpersonal skills are very commendable. Other aspects are critical thinking and reasoning - which makes them a perfect fit for bespoke analyses. Attention to detail, quick turn around times to pick up skills, being individual/team player are some other factors considered while looking at an intern.

Name: Vidula Ashok

Designation: Senior Analyst

The mentor has given feedback based on the following values Innovation Number savvy and inquisitive. Has been able to develop insight stories helpful for the business Passion. Hardworking and driven. Has been there for the team at times to help manage workflow and is always accountable for his/her work Community. Friendly, Helpful and Interacts with multiple stakeholdersDetermination. Wants to always push himself/herself and has taken up new projects to do the same Adaptability. Easy personality to work with and had fit into the team and MIQ environment perfectly.

Faculty

Name: Dhanashree N P

Comments: Expectations from industry: The PS-II station Media iQ Digital is in the domain of analytics for Digital Advertising. The 16 PS-2 students were assigned to two domains Tech (3) and Analyst (13). The analyst interns were assigned to different country specific teams. The major work involved was in campaign analysis for clients - which includes collecting data from various sources, analysing them by applying their indigenous strategies and presenting insights to clients - which can be used for betterment of the ad campaigns, brand awareness, brand upliftment etc. The approaches used are a mix of various statistical, data mining, machine learning techniques at varying complexity levels. The major tools/skills put in to use are SQL, Microsoft Excel, R, Tableau and other proprietary products of Media iQ Digital. One important outcome of the tasks done was that the students were able to visualize and tune the impact of lot of factors which affected the success/failure of digital ad campaigns. The tech interns were focused on tasks like - automating user/roles creation, automating the data ingestion from multiple sources to usable format (tables etc.) for the analyst teams to use. The work was done using LDAP, web services, Apache Camel, Jenkins, Maven, Vert.x etc. The expectations of the company in terms of technical skills is familiarity with basic programming. Most of the tools are covered as part of the intensive training provided on joining. As far as soft skills are concerned, the company looks at aspects like analytical ability, communication skills, time management and qualities like being self-motivated, eager learner and team player.

Student

Name: Jaivardhan Singh (2013B2A10687G)

Student Write-up

Short Summary of work done during PS-II: Data Analysis - Media Campaign Management and optimization. Also involved delivering insights.

Tools used (Development tools - H/w, S/w): SQL, Excel, PPT, R

Objectives of the project: Delivering Insights and upping revenue nos by optimization

Outcomes of the project: Inspire through Insights

Major Learning Outcomes: Data Extraction tools (mentioned above), Digital Marketing, and automation procedures.

Brief Description of working environment, expectations from the company: Super friendly. Ownership culture. Jump into the deep end as soon as possible. Poor transparency.

Name: Vivek (2014A8PS0397P)

Student Write-up

Short Summary of work done during PS-II: Collection data and representation.

Objectives of the project: To learn how to analyze things

Major Learning Outcomes: SQL

Brief Description of working environment, expectations from the company: employee friendly.

Name: Ankam Ravi Teja (2014A2PS0568H)

Student Write-up

Short Summary of work done during PS-II: Basically you will be working on many ad campaigns. This includes understanding and managing ad campaigns using media iq tools and secondary research.

Tools used (Development tools - H/w, S/w): SQL, MS excel and power point, Hive, Tableau, internal company tools.

Objectives of the project: Understanding and managing an ad campaign

Outcomes of the project: good understanding of the display advertising world.

Major Learning Outcomes: well versed with the usage of SQL,MS Excel and power point and good experience in the usage of Tableau and Hive.

Brief Description of working environment, expectations from the company: Working environment is extremely good. The employees and team members are really helpful in nature. One can learn a lot while in Media IQ, not only related to the company.

Name: Sagar Shete (2014A4PS0188G)

Student Write-up

Short Summary of work done during PS-II: Digital advertising analytics

Tools used (Development tools - H/w, S/w): SQL, EXCEL

Objectives of the project: To learn about digital advertising analytics

Outcomes of the project: Learned about digital advertising

Major Learning Outcomes: Basic data analytics using Excel, knowing how digital advertising works

Brief Description of working environment, expectations from the company: No clear distinction in technical and analytics while filling PS 2 and was allotted on basis of profile. For non tech it's good. But for technical, it is risky as it depends on your profile if you will get it

Name: Vaibhav Jain (2014A2PS0763P)

Student Write-up

Short Summary of work done during PS-II: Interning as Analyst Intern, work did during the P was to analyse the data that was pulled from data tables using SQL/Hive queries and sometimes the reporting service of the company itself, depending on the type of data that was required for analysis. The analyzed data was shown in the form of charts and diagrams on PowerPoint. More recently, Tableau was used also used to create custom dedicated dashboards. My work was mostly around creating those dashboards.

Tools used (Development tools - H/w, S/w): SQL, PowerPoint, Excel, Tableau, Hive, R

Objectives of the project: To create standard but dynamic dashboards using tableau thereby automating the work

Outcomes of the project: The delivery turnaround time reduced significantly because of the dashboards

Major Learning Outcomes: Leaned SQL and Tableau.

Brief Description of working environment, expectations from the company: At Media IQ, the employees are really helpful and friendly, the working hours are flexible. In the semi-formal environment, you can expect occasional festive celebrations too. Talking about the expectations, it was expected of the company to provide quality tools, facilities, opportunities and good environment, which the company successfully provided.

Name: Ravneet Baansal (2013B3A30645P)

Student Write-up

Short Summary of work done during PS-II: The work involved handling of digital media campaigns for various clients. It included setting up a campaign, optimizing the campaign towards campaign goals and reporting the performance back to the clients.

Tools used (Development tools - H/w, S/w): SQL, R Studio, Microsoft Excel, Microsoft Powerpoint

Objectives of the project: Handling digital media campaigns

Outcomes of the project: Good performing campaign generated higher revenues through margins

Major Learning Outcomes: Able to analyse huge amount of data by joining different data sources and better understanding of the digital media market

Brief Description of working environment, expectations from the company: Each member of the team was very enthusiastic about their work and was ready to help with any problem, be it work related or otherwise.

Name: Soumyashis Pradhan (2014A1PS0593P)

Student Write-up

Short Summary of work done during PS-II: Full Stack Web Development . Mostly the work was related to debugging-issues of the product of team I was working in . Also I made a dashboard for user onboarding (clients).

Tools used (Development tools - H/w, S/w): Javascript , java Mysql

Objectives of the project: Make a dashboard for user onboarding , and also bug-fixes

Outcomes of the project: Skill improvement as a full stack web developer

Major Learning Outcomes: React , Redux , Agile working of teams , Java EE , Mysql

Brief Description of working environment, expectations from the company: The work environment is chilled and very open to ideas and innovations . Very friendly colleagues and mentors.

Academic courses relevant to the project: OOP , DSA

Name: Aastik Koshta (2014A1PS0598P)

Student Write-up

Short Summary of work done during PS-II: Campaign Analysis for digital advertisement: correlations with weather,stock market,etc. Using R,Excel, SQL,Tableau to generate insights.

Tools used (Development tools - H/w, S/w): R,Excel,SQL,Tableau

Objectives of the project: Generate Insights for Ad Campaigns

Outcomes of the project: How the campaign ran overall?

Major Learning Outcomes: Tableau

Brief Description of working environment, expectations from the company: Good working environment. No office timings. Most of the guys here are BITSians.

Academic courses relevant to the project: None as such, some knowledge of Machine Learning is okay.

PS-II Station: Mordor Intelligence, Hyderabad

Student

Name: Shashwat Pareek (2013B3A40628G)

Student Write-up

Short Summary of work done during PS-II: Study the market and make reports/samples/proposals for different industries, like the automotive industry sub-segments.

Tools used (Development tools - H/w, S/w): Excel, Word, PPT, Little bit of SQL usage(not used by everyone).

Objectives of the project: Make Reports on Topics

Outcomes of the project: Multiple Project reports/samples/proposals

Major Learning Outcomes: Excel, SQL.

Brief Description of working environment, expectations from the company: Working environment is dependent on the team you get within the company. There are some negative elements in different teams but overall my colleagues were good and were easy to make friends with. The company expects you to work hard and give time to complete the work.

Academic courses relevant to the project: Market Research.

Name: Abhishek Verma (2014A3PS0370H)

Student Write-up

Short Summary of work done during PS-II: The work done here aims at studying the market and prepare a report analysing the strategies to be followed by our clients. We analyse different markets and prepare reports for them to make their strategies.

Tools used (Development tools - H/w, S/w): Excel, word, ppt

Objectives of the project: Analyse and study market

Outcomes of the project: knowledge of the industry

Major Learning Outcomes: Market Research

Brief Description of working environment, expectations from the company: Good, not much of corporate atmosphere

Academic courses relevant to the project: Finance courses

Name: Kartheek Manavarthi (2013B3A80609H)

Student Write-up

Short Summary of work done during PS-II: The work is totally related to market research, including secondary research, primary research, and data handling work on MS Excel. Work at Mordor would help an individual to improve writing and speaking skills and in knowing how to approach even the higher management people in corporate firms. Interns are trained for the work and there are no pre-requisites for the work at Mordor. Market research doesn't fall in any of the courses offered at BITS hence except for Technical Report Writing, which helps in improving formal writing; a primary requirement at this organisation.

Tools used (Development tools - H/w, S/w): MS Excel, MS Word, MS PowerPoint

Objectives of the project: Market Research

Outcomes of the project: Knowledge on various markets and the research methodology

Major Learning Outcomes: Research methodology and soft skills

Brief Description of working environment, expectations from the company: The working environment is very organic. Levels of hierarchy are low and interns have direct contact with the team leads almost everyday. There is no dress code at Mordor and has a five day week. The description of work looks simple but the real challenge is in improving the quality of the research output. The company expects an employee to put 8 working hours minimum and also to work extra hours during to meet a few delivery deadlines. Hard work and commitment would lead to a PPO. Good luck.

Academic courses relevant to the project: Technical Report Writing (TRW)

Name: R Sri Gouri (2014A5PS0298P)

Student Write-up

Short Summary of work done during PS-II: Designed and built an intelligence center for the healthcare domain. Worked on market modelling, market estimation through primary and secondary research. Also worked on repository which includes writing syndicate market research reports

Tools used (Development tools - H/w, S/w): MS-Excel, MS-Word and MS-PowerPoint

Objectives of the project: To build an intelligence center particular to diabetes and to update syndicate reports for repository

Outcomes of the project: A complete diabetes care IC with 21 markets covered across 15 countries for 10 years along with company shares of major players(at country level). A repository with 17 syndicate reports updated in a span of one month

Major Learning Outcomes: Market research, primary and secondary research, market estimation, syndicate report writing, top down and bottom up approach for data collection and data analysis.

Brief Description of working environment, expectations from the company: The company expects individuals to do end-to-end work and also gives freedom (to some extent) in doing so. Lot of scope for learning.

Name: Rahul Udhwani (2014A5PS0635P)

Student Write-up

Short Summary of work done during PS-II: I worked on Diabetes Intelligence Centre where I prepared modelling sheets of 15 countries of each and every global market which was included in the intelligence centre. Also I worked on Repository reports where I had to update existing reports, add recent discoveries and product launches and also included analysis in each and every segment of the report to convert it into a standard market research report

Tools used (Development tools - H/w, S/w): MS - Excel, MS - Word, and MS - Powerpoint

Objectives of the project: Prepared the first Healthcare Intelligence Centre and updating of Repository reports

Outcomes of the project: Data extraction, data analysis, market research, data mining, market analysis

Major Learning Outcomes: Data extraction, data analysis, market research, data mining, market analysis

Brief Description of working environment, expectations from the company: Flexible working timings, healthy and learning environment, the employees, the team leads were helpful and kind during the whole tenure of PS2.

Academic courses relevant to the project: NO Course is relevant as far as I know

Name: Abhishek Bansal (2014A5PS0354P)

Student Write-up

Short Summary of work done during PS-II: Modelling Sheets on Diabetes Care Intelligence Centre

Tools used (Development tools - H/w, S/w): Microsoft Office Suite

Objectives of the project: Healthcare Intelligence Centre to be made

Outcomes of the project: Market Analysis, Market Research, Data Extraction

Major Learning Outcomes: Market Analysis, Market Research, Data Extraction

Brief Description of working environment, expectations from the company: Very chilled out environment with no time constraint. But have to complete 9hrs Howsoever. Not much of learning, Repetitive work.

Academic courses relevant to the project: PMQC, Pharmacology

Name: Vivek Sharma (2014A5PS0036P)

Student Write-up

Short Summary of work done during PS-II: I worked on Intelligence Center for first interim in which we prepare the modeling sheets for "Diabetes Care" market. As a team we worked on 21 markets. In second interim we worked on repository during which we updated all the old reports as well as we made converted them to syndicated report.

Tools used (Development tools - H/w, S/w): Microsoft Excel, Microsoft Word, Google Drive and Microsoft Powerpoint

Objectives of the project: To prepare a descriptive modeling sheet containing not only market values but also the details of all primary and secondary sources.

Outcomes of the project: We prepared an intelligence center.

Major Learning Outcomes: I learned about Excel, Powerpoint and I learned about the basic of market estimation.

Brief Description of working environment, expectations from the company: It was very cooperative and understanding, but the package offered was very low according to the work.

Academic courses relevant to the project: PMQC, Pharmacology

Name: Anushka Ghosh (2014A5PS0266P)

Student Write-up

Short Summary of work done during PS-II: Worked on approximately 40 reports since my joining, ranging from the pharmaceutical industry to medical devices and bio technology, catering all aspects of healthcare and gained a wholesome experience.

Tools used (Development tools - H/w, S/w): EXCEL

Objectives of the project: To attain a wholesome idea about healthcare analytics and market research.

Outcomes of the project: Learnt the usage of different analytical tools to do industry, market and company analysis. Collected data using primary and secondary methods and worked on factors affecting market dynamics, competitive landscaping, company profiles, market segmentation and other parts of

the report. As a part of a 10 member team, generated revenue worth USD 77,000 in the third quarter of fiscal year 2017.

Major Learning Outcomes: Worked on Market Estimation of certain markets which tested my tenacity, reasoning and analytical skills to the fullest, endowing me with a comprehensive experience of market sizing.

Brief Description of working environment, expectations from the company: A healthy working and learning environment. Given the company is in its nascent stage, employees and interns are closely knit and share equal burden of work. Although very limited prospect of thriving and personal development.

Name: M.Pranoy Raj (2013B4AB0488H)

Student Write-up

Short Summary of work done during PS-II: The work includes writing the following in report, Report description, Research methodology, Market dynamics which include the drivers, restraints, and opportunities, Market segmentation which is based on the Purpose and geography, the company profiles of the major industry players, and the competitive landscape.

Tools used (Development tools - H/w, S/w): work is done mostly on excel, ppt and word.

Objectives of the project: writing reports on markets according to the clients request

Outcomes of the project: learning about the companies in C4ISR market

Major Learning Outcomes: u learn a little about the market in the department you are working in but it wont be usefull to u in future

Brief Description of working environment, expectations from the company: working environment is good and people are free to come at their own timings.

Academic courses relevant to the project: no courses required

Name: vivek chourasia (2014A5PS0239P)

Student Write-up

Short Summary of work done during PS-II: worked on various market reports, and size estimations along with consult projects

Tools used (Development tools - H/w, S/w): MS EXCEL, MS WORD, MS POWERPOINT

Objectives of the project: MARKET RESEARCH ANALYSIS

Outcomes of the project: discussed various segments of a market research report and market modelling and size estimation

Major Learning Outcomes: Learned about various ongoing and historical trends in Healthcare industry, various cause-effect relationships in the working of healthcare market, market modelling and dynamics

Brief Description of working environment, expectations from the company: the company offers a chilled out place to learn new things, people are friendly and we are given responsibility for our work.

Name: HEMANSHU Kale (2013B3AB0653P)

Student Write-up

Short Summary of work done during PS-II: Creating a statistical database with forecasting some market elements. Making reports based on market research

Tools used (Development tools - H/w, S/w): MS Word, Powerpoint, Excel, made my own

Objectives of the project: To make a statistical database with forecasting of all the data points a client may need and to make a market research report as per the client's requirement.

Outcomes of the project: A statistical ready-to-sale database was created and some market research reports were made.

Major Learning Outcomes: Better understanding of Market analysis, drivers restraints, SWOT analysis etc.

Brief Description of working environment, expectations from the company: Working environment is good, HR organizes celebrations of some festivals, and makes efforts for the company culture.

Name: Kshitiz Pandey (2013B4A80690G)

Student Write-up

Short Summary of work done during PS-II: Market research and Market Estimation

Tools used (Development tools - H/w, S/w): MS Excel, MS Word, MS PowerPoint, and Data scrapping

Objectives of the project: To prepare a market study as per client requirements

Outcomes of the project: The market study report was completed and delivered to the client.

Major Learning Outcomes: Learnt market estimation and prediction

Brief Description of working environment, expectations from the company: Friendly mentors who to teach you right from scratch how to prepare market study reports.

Academic courses relevant to the project: Market Research.

Name: Siddharth Harshe (2013B5A80650G)

Student Write-up

Short Summary of work done during PS-II: I have worked extensively on report descriptions and table of contents of various global markets and also country specific markets. I have also worked on articles and samples of various markets like ~Global Beverage Packaging Market™. Later I was assigned the flash team, where also I worked on revamping the old report descriptions and table of contents. I have done secondary research to get the various missing points in the ME spreadsheet and make an extensive collection of information points.

Tools used (Development tools - H/w, S/w): MS Excel

Objectives of the project: Market study according to the requirements of the clients.

Outcomes of the project: Extensive data collection for particular markets and successful delivery of reports.

Major Learning Outcomes: Learnt how to do extensive secondary market research.

Brief Description of working environment, expectations from the company: Engaging and helpful employees. It would be helpful if more students are given IC work rather than report descriptions and company profiles.

Name: Srujan Reddy (2013B2A80906G)

Student Write-up

Short Summary of work done during PS-II: Worked on regional analysis, segmentation and company profiles of reports

Tools used (Development tools - H/w, S/w): PowerPoint, Excel

Objectives of the project: Market Research Intelligence

Outcomes of the project: Successful delivery of collateral

Major Learning Outcomes: Excel, Market Analysis

Brief Description of working environment, expectations from the company: Work environment is relaxed and only quality of work matters. The company expects you to provide quality output on time. How you go about it is irrelevant.

Academic courses relevant to the project: Principles of Management

Name: CHOUDHARI HARDIK SUDHAKAR (2014A1PS0577G)

Student Write-up

Short Summary of work done during PS-II: Analyzed market and applied business models like SWOT, PESTLE, BCG matrix. Worked on market segmentation, company profiles, market estimation and forecast. Worked on more than 7 different reports and analyzed more than 30 global companies.

Tools used (Development tools - H/w, S/w): MS Excel, Powerpoint and word

Objectives of the project: To analyze market and present in report, studying about articles and annual reports

Outcomes of the project: I got to learn how to approach and analyze problems and market

Major Learning Outcomes: Market analysis skills

Brief Description of working environment, expectations from the company: Friendly environment, Good managers, Guided all the time

Academic courses relevant to the project: TRW, POE, Chemistry

Name: VIGNESH REDDY G V (2014A5PS0811H)

Student Write-up

Short Summary of work done during PS-II: Involved in all the processes of the chain of a market research analysis of the Healthcare industry. The work entailed understanding the scope of the market globally, and involved intensive research - both primary and secondary - and making customized intelligence reports for the clients.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: Making customized intelligence reports for the clients involving intensive primary and secondary research.

Outcomes of the project: Made intelligence reports for clients on a demand basis.

Major Learning Outcomes: Market Estimation

Brief Description of working environment, expectations from the company: The company being a 4 year old LLC, almost every employee around is relatively new to the profile and the workplace. You get

to be involved in the decision making and work alongside the employees in client queries & relations and grow as a consultant as the company grows and ventures into new directions.

Academic courses relevant to the project: Business Analysis and Valuation

Name: John Arnold David (2014A1PS0531P)

Student Write-up

Short Summary of work done during PS-II: To prepare market reports based on recent trends and developments in the Energy & Power sector across the world.

Tools used (Development tools - H/w, S/w): Google and a desktop. Reports were prepared on Powerpoint or Word. Some use of Microsoft Excel was also there.

Objectives of the project: To find out the recent developments and trends occurring in a particular market of a particular region.

Outcomes of the project: Sale of reports.

Major Learning Outcomes: Learned how to google things properly, how to write reports, how to maintain the flow in a report, improved my business language.

Brief Description of working environment, expectations from the company: The working environment of the company was very good. The work timings were not very strict and the basic requirement of the company was to finish the work assigned to you that particular day and then only leave. There was very good bonding among the employees and the team leaders are very supportive.

Academic courses relevant to the project: Technical report writing is the most important before coming here. Core disciplinary subjects would also very helpful. But there are sometimes topics beyond the scope of topics covered under the undergraduate degree but they can be still easily researched about on the internet. Doing Security Analysis and Portfolio Management would be little helpful for some specific projects although there is no guarantee that such projects would come again.

Name: Rutvik Kasbekar (2014A3PS0319G)

Student Write-up

Short Summary of work done during PS-II: Automotive market research, studied various aspects of the automotive market by components and different aspects. Made a report consisting of various sections highlighting the aspects of the market like drivers, restraints and opportunities in the market. Segmented every market by geography, type, technology.

Tools used (Development tools - H/w, S/w): Java Script, microsoft office suite

Objectives of the project: Study of various aspects of the automotive market to make reports that sell under the organisation.

Outcomes of the project: Reports were made depending on the clients requirement.

Major Learning Outcomes: Studied how to do market research in depth.

Brief Description of working environment, expectations from the company: Relaxed environment with flexible timings. Very helpful employees.

Academic courses relevant to the project: Market Research

Name: Pujitha Devireddy (2014A5PS0812H)

Student Write-up

Short Summary of work done during PS-II: In short created Market Research Reports. Done miscellaneous in the company like creating samples, solved client queries.

Tools used (Development tools - H/w, S/w): MS- Excel, MS-Powerpoint, MS- Word

Objectives of the project: Market Research

Outcomes of the project: Improved writing and analytical skills.

Major Learning Outcomes: Data Mining, presentation skills, writing skills, analytical skills, handling client queries, time management

Brief Description of working environment, expectations from the company: The work environment is very good. The employees are very friendly and tech lot of things.

Academic courses relevant to the project: Technical Report writing and few disciplinary courses.

Name: Ravikant Saini (2014D2TS0988P)

Student Write-up

Short Summary of work done during PS-II: The work assigned to me is Intelligence Centre(IC). In the IC, I had been assigned 4 countries which are Egypt and Nigeria from Africa and Brazil and Ecuador from South America. My initial work was to obtain data for crops and seeds of these 4 countries following production, Area harvested, Yield and Seed production. Second step was to get information on major players active in these 4 countries regarding their market share, Financials, new product launch and merger and acquisitions. After getting required data by primary and secondary research, I started the forecasting of these crops from 2017 to 2022 for each country. The forecasting is for Area Harvested, Production, Yield, Seeds production, Import and Export values and volumes. Some factor needs to be kept in mind while doing forecasting like the current trend, Historic trend, Drivers, Restraints, Government policies etc. Without having idea of these factors, The forecasting is as waste as raw data. I also got opportunity to work on linkedIn promotions, Marketing Deliverables, Company profiles, Rd and TOC etc.

Tools used (Development tools - H/w, S/w): Microsoft Word, Microsoft Powerpoint, Microsoft Excel, LinkedIn and Google

Objectives of the project: To get an knowledge how to prepare professionals report when working in an organisation of Market Research and having an idea of forecasting for any product.

Outcomes of the project: In my 6 months of Internship, I got to know how to prepare an market research report with knowledge of preparing company profiles, Report Description, Competitive Landscape and Swot Analysis and hoe to write Press release, Articles, Infographics for Marketing promotions.

Major Learning Outcomes: I got knowledge over Preparing company profiles, Competitive landscape, Report Descriptions, Table of Contents, Primary research, Secondary research.

Brief Description of working environment, expectations from the company: I have definitely grown personally and professionally in more ways than I could have foreseen. The jugaad to keep competition at bay, clients happy and revenues growing for my team was constant. My experience is not unique, but it isn't all that common either.

Mordor is a meritocracy that has everything to offer if you are hardworking and adventurous. It all comes down to how well you can receive it.

Academic courses relevant to the project: Principles of Management, Business Communication, Mass Communication

Name: Ayush Shrimal (2014A1PS0642G)

Student Write-up

Short Summary of work done during PS-II: Work is basically making market research reports for clients on which you are allotted some part of the report.

Tools used (Development tools - H/w, S/w): Powerpoint, Excel

Objectives of the project: To make Market Research Report

Outcomes of the project: Market Research Report

Major Learning Outcomes: Porter's Rule, PESTLE Analysis, SWOT Analysis

Brief Description of working environment, expectations from the company: Working culture is good but work might become little boring after some time. So, try to learn different things in report.

Academic courses relevant to the project: Fundamentals of Finance & Accounting

Name: Taniya (2013D2PS0989P)

Student Write-up

Short Summary of work done during PS-II: Market research is the process of assessing the viability of a good or service through research conducted directly with the consumer which allows a company to discover the target market and record analyst opinions and other input from consumers regarding interest in the product. Market research may be conducted by the company itself or by a third-party company that specializes in the market research field. The PS station I am currently associated with, Mordor Intelligence, belongs to the latter category. Within the pyramid of market research, market modelling, building an intelligence center, analysing the strategies of leading companies, forms the foundation for all the other levels. The market research reports on food and beverage I am working on involves understanding the drivers and restraints for a specific market, segmenting the topic and understanding the major companies operating in the region.

Tools used (Development tools - H/w, S/w): Intelligence Centers, Modelling Sheet, Market Estimation, Market Research, Repots, Top Down Approach, Bottom Up Approach, Logical Guesstimation, Analyst Views, MS- Excel (Advanced), CAGR, Primary Research, Secondary Research

Objectives of the project: Intelligence Centers, in brief, are a combination of building comprehensive data and analysis of this data which help us in forecasting the trends of industry.

Outcomes of the project: They contain exhaustive data which helps one arrive at various conclusions thus helping them in market related decision making. The flash reports emphasize on the understanding of the market based on the analysis done on the various segments in the market and the major companies operating in the market.

Major Learning Outcomes: The scope of my current project includes an exhaustive modelling sheet with 25-100 factors governing the final market value and analysis of the innumerable set of data available to arrive at a conclusion. However, the project is limited to the defined scope of market modelling and does not include embedded analytics and statistical modelling which would take the project to the next level of the pyramid. Embedded analytics is the technology designed to make data analysis and business intelligence more accessible by all kinds of application or user. This part is currently being handled by the technical team of the company, the foundation material for which is provided by the ICs. The flash reports include the understanding of the market through secondary and primary research and giving an overview about the drivers and restraints for the market and thus providing the client with the relevant information related to it.

Brief Description of working environment, expectations from the company: Every company has a unique way to present their research reports. Mordor Intelligence reports have this particular style as explained in detail in this report. Due to this easy, simple and clear form of the report, the company is making huge revenues and grew substantially high from its beginning. The work environment at Mordor Intelligence is an absolute bliss--working with people your age gives you a confidence boost and a sense of responsibility to take on bigger projects.

Academic courses relevant to the project: Management and finance courses, in addition to content writing and digital media courses as it makes the majority of the work here at mordor, that is, analysing, explaining and writing the content.

Name: HIMANSHU Singh (2014A5PS0476P)

Student Write-up

Short Summary of work done during PS-II: Market research

Tools used (Development tools - H/w, S/w): Excel, word, powerpoint.

Objectives of the project: Market research

Outcomes of the project: Details about the market which can help companies to take management decisions.

Major Learning Outcomes: Basics of market research

Brief Description of working environment, expectations from the company: Company is only four years old, so work culture is somewhat similar to a start up. Management and employees are nice and are willing to help interns in doing the market research.

Name: Aditya Singh (2013B3PS0580G)

Student Write-up

Short Summary of work done during PS-II: I worked under Agriculture domain of Mordor Intelligence. During my initial months, I worked on Information Center (IC) which is a big database covering around 85 crops each in the countries, namely Uganda, Chile and Morocco. I used the data downloaded from FAO and UN Comtrade. Data was pertaining to Area harvested, production and import/export. Lastly, I forecasted the values pertaining to these data points up to 2022. The other major work involvement I had was related to the Company Profiles which mainly comprises of SWOT analysis in a particular market. During the period of my PS-2, I worked on more than 100 Company Profiles, covering various markets under the Agriculture domain.

Tools used (Development tools - H/w, S/w): MS Excel, MS Word

Objectives of the project: Forecasting of the data related to major crops

Outcomes of the project: I became proficient in advanced Excel and in Market Research.

Major Learning Outcomes: Company Profiles, Pivot Tables, SWOT Analysis

Brief Description of working environment, expectations from the company: My mentors were very friendly and accommodative. Work timings were flexible. PPO was less as the work in market research hardly involves much technical knowledge.

Academic courses relevant to the project: Market Research, Principles of Economics, Fundamentals of Finance and Accounting, Economic Environment of Business

Name: Kartik Kochhar (2013B4A10385P)

Student Write-up

Short Summary of work done during PS-II: The work involved researching of different markets (eg : India electric vehicle market) and preparing reports on them. It also included estimation of the present size of the market and future forecasts.

Tools used (Development tools - H/w, S/w): MS Excel, MS Word, MS Powerpoint

Objectives of the project: Market Research and Analysis

Outcomes of the project: Prepared reports which helped clients in making their investing strategies.

Major Learning Outcomes: Learnt to do the in depth analysis of markets and their trends.

Brief Description of working environment, expectations from the company: The company has an open and transparent working environment. The work is done in teams and hence improves communication.

Academic courses relevant to the project: Financial Engineering.

PS-II Station: MSCI (Global Implementation Services), Mumbai

Student

Name: Dhruv Dave (2012B3A80538P)

Student Write-up

Short Summary of work done during PS-II: Mastering and explaining the different input data formats and content requirements for all instrument types and understanding the necessary terms and conditions required to describe the holdings in the client™s portfolio. Assisting clients with data conformance and validation testing, especially checking input files for proper formatting and appropriate content for modelling and using processing logs to analyse the portfolio for accuracy and completeness. Confirming data coverage for the securities and benchmarks that a client wishes to model, including analysing the requirements and working with internal teams responsible for maintaining our datasets..

Tools used (Development tools - H/w, S/w): WinSCP, BarraOne, RiskManager, Salesforce

Objectives of the project: Client onboarding for our analytical products and services and generating custom regulatory reports.

Outcomes of the project: I have been involved in addressing client queries and executing deliverables which provide solutions at the client's end and adequately meet requirements to their extent of satisfaction.

Major Learning Outcomes: ¢ Developed a fair expertise in using our proprietary softwares:

RiskManager and BarraOne.

¢ Improved my soft skills through regular client interactions.

¢ Learned a lot about complex instrument types and ways to modeling them.

¢ Enhanced my management skills such as ownership of responsibilities, adhering to stringent guidelines and a welcome exposure to the corporate work culture.

Brief Description of working environment, expectations from the company: I came to MSCI as a part of PS II, to learn and gain knowledge in the field of finance. But as fate would have it, I was a part of the

Implementation Services team. So, it was overall a new area to explore for me and I had a good PS II experience. In terms of learning, the experience has been nothing short of terrific. The time spent at PS-2 has been a great teacher in various spheres, including but not limited to understanding corporate life, expert guidance, apprehending new technologies and their developments and building a great character. The internship has helped me understand the dynamics of a corporation; in particular with the formal communication skills, organizational hierarchy, punctuality and many more, which are best learnt in a workplace.

Academic courses relevant to the project: DRM, SAPM, FinE, FinMan.

PS-II Station: MSCI (Global Implementation Services), Mumbai

Student

Name: Amandeep Singh (2013B3AB538P)

Student Write-up

Short Summary of work done during PS-II: Construction of different financial indexes. Mainly work consists of writing assembly code that required data from database and produces a index with weights assigned to a particular set of securities. Other tasks include testing of such assemblies developed by others for dual validation purposes.

Tools used (Development tools - H/w, S/w): Matlab, Excel, SQL

Objectives of the project: Writing assembly code for a particular index

Outcomes of the project: A portfolio with weights assigned to a set of securities

Major Learning Outcomes: Financial markets, factor indexes, thematic indexes

Brief Description of working environment, expectations from the company: Positive work environment, very friendly people

Academic courses relevant to the project: SAPM, Financial Management, DRM

PS-II Station: MSCI (Solution Management), Mumbai

Student

Name: Aditya Jha (2013B3A30460G)

Student Write-up

Short Summary of work done during PS-II: Built client kits, developed risk reports, optimised server management, and designed workflows

Tools used (Development tools - H/w, S/w): Eclipse, xmlspy, many web applications

Major Learning Outcomes: Learnt how the industry operates. Very crucial exposure, very informative. Developed soft skills

Brief Description of working environment, expectations from the company: Very friendly environment with a rich and professional work culture.

PS-II Station: Multi Commodity Exchange of India Ltd., Mumbai

Student

Name: Arnav Kumar (2014A7PS0119G)

Student Write-up

Short Summary of work done during PS-II: Developed an in house testing platform for the exchange. Developed a web based application to maintain defaulter database. Worked on integrating single sign on facility at the exchange.

Tools used (Development tools - H/w, S/w): Maven, Gradle, Vaadin, Keycloak.

Objectives of the project: To develop applications to be used by various trading members of the exchange and in house exchange executives.

Outcomes of the project: Applications in testing to be used on a later date to be deployed on the MCX's website and internal servers.

Major Learning Outcomes: Applications in testing to be used on a later date to be deployed on the MCX's website and internal servers.

Brief Description of working environment, expectations from the company: Great working environment. Friendly managers encouraging you to work up to the best of your capabilities.

Academic courses relevant to the project: Object Oriented Programming, Database Management System

Name: ROHAN TOTEJA (2014A7PS0018G)

Student Write-up

Short Summary of work done during PS-II: The report focuses on various hedging strategies that the hedgers can use to manage price risk. All these strategies can be classified into three types, namely, reducing the price volatility, having a favorable price in a stable market and lastly establishing a price range. In the end, this report also gives an insight into how speculators can use options to make a profit.

Tools used (Development tools - H/w, S/w): Excel

Objectives of the project: different types of hedging strategies using options in commodities

Outcomes of the project: As we have seen, this report focuses on various hedging strategies that the hedgers can use to manage price risk. All these strategies can be classified into three types, namely, reducing the price volatility, having a favorable price in a stable market and lastly establishing a price range. In the end, this report also gives an insight into how speculators can use options to make a profit.

Major Learning Outcomes: Some recommendations which can increase participation of hedgers in options trading are:

1. Less premium and brokerages should be charged so that hedgers can get more leverage on commodities and hence less loss because the maximum amount of loss in options trading generally equals the premium and brokerages paid.
2. The Government should impose restrictions on speculators so as to decrease volatility in options market.

Details of papers/patents: Research to be used by MCX. No paper can be published

Brief Description of working environment, expectations from the company: Working environment is excellent. MCX motto is 'Trade with Trust' and they surely live up to it.

Academic courses relevant to the project: ECON F315 Derivatives & Risk Management

PS-II Station: My POS Technologies Pvt. Ltd., Mumbai

Student

Name: Divya Prakash Singh (2014A8PS0496H)

Student Write-up

Short Summary of work done during PS-II: The project was to develop a web application that connects retailer with the distributors. The idea behind the project was to make the on-line business platform for the retailers and Distributes of the Pharmaceuticals product. Once a retailers has signed-in our application he has access to all the distributors registered in our application. He can search for all the distributors selling a particular product and compare the prices they are offering. He can also place the order though our application. A distributor can add discount schemes to the product to attract the retailers. The application is an order management platform which facilitates the giving and taking of orders. It makes the retailers and distributors more independent and also led to increase in scope of their business.

Tools used (Development tools - H/w, S/w): Node, HTML, CSS, Java Script, Angular.

Objectives of the project: Develop web application to facilitate order placements by the retailers to the distributors of the pharma products.

Outcomes of the project: Web application enabling retailers to place the order to the distributors with out help of any broker.

Major Learning Outcomes: Learned about web development, Data base management.

Brief Description of working environment, expectations from the company: Being an startup there where lots of learning opportunities in the company. I got a better Idea about how the industry works. Coworkers where supporting and always ready to help.

Academic courses relevant to the project: Intro to programming, DSA, DBMS and OOP

PS-II Station: My smart price, Hyderabad

Faculty

Name: Dr Yvk Ravi Kumar

Comments: Expectations from industry: The work is more related to learning systems which involves dealing the dynamic data bases. Students are expected to know about the data bases and also building learning models out of these.

Student

Name: Parul Behl (2013B4A1773P)

Student Write-up

Short Summary of work done during PS-II: Backend analytics, created a dashboard using SQL, PHP, JAVASCRIPT

Tools used (Development tools - H/w, S/w): Php, SQL

Objectives of the project: To create strategies for profit increment

Outcomes of the project: Successfully created the dashboard

Major Learning Outcomes: Php, SQL, JAVASCRIPT

Brief Description of working environment, expectations from the company: Flexible environment

Academic courses relevant to the project: C Programming

PS-II Station: Next Education India Pvt. Ltd., Hyderabad

Student

Name: Girish Vamsi Reddy (2013A8PS0541H)

Student Write-up

Short Summary of work done during PS-II: Data migration using ETL tools

Tools used (Development tools - H/w, S/w): Pentagon, workbench, open source softwares

Objectives of the project: Data migration of old data to new tables

Outcomes of the project: DONE BEFORE TIME.

Major Learning Outcomes: Database management and Core Infrastructure

Brief Description of working environment, expectations from the company: Everyone is approachable.
Decision taking can be improved.

Academic courses relevant to the project: DBMS, Machine learning.

Name: Vibhu Jain (2013B4A30521H)

Student Write-up

Short Summary of work done during PS-II: I was in core infrastructure team. One important project was to setup, configure and integrate docker swarm server to run all their web services as docker containers. Another project was to integrate sentry which is an error tracking web server in QA and production environment. Also did a project to create some complex Jobs in Jenkins, a continuous integration server. Other was to integrate a kafka monitoring system.

Tools used (Development tools - H/w, S/w): open source software and web servers

Objectives of the project: to automate, resolve errors

Outcomes of the project: Created easier development environment

Major Learning Outcomes: Adequate testing should be done before deploying anything

Brief Description of working environment, expectations from the company: Everyone in the company is very approachable. Decision taking can be improved.

Academic courses relevant to the project: basic coding.

Name: Anmol Shukla (2014A3PS0274G)

Student Write-up

Short Summary of work done during PS-II: I worked with the database team here. My role was solely to research and implement existing database tools and technologies which may optimize, improve the system, as well as reduce the amount of work required by the DB Admin.

Tools used (Development tools - H/w, S/w): MySQL, Tungsten Replicator, HAProxy, ProxySQL, Amazon RDS, Pentaho kettle

Objectives of the project: Research and Implementation of database tools to improve system performance.

Outcomes of the project: Tools were researched and recommendations were passed to higher management.

Major Learning Outcomes: Learnt systems engg.

Brief Description of working environment, expectations from the company: Working environment is healthy, and since the company is not very big, the work assigned will not be limited in scope and skills required. The company needs a lot of work, so personal initiative taken is always rewarded with good guidance and learning outcomes.

Academic courses relevant to the project: DBMS, DSA, OS.

Name: shonhit trehan (2013B3A80665P)

Student Write-up

Short Summary of work done during PS-II: my project for the duration of practice school was data migration from old erp system to new services based erp system. the secondary part of the project was

to create data warehouse for reporting and analysis solutions to the new erp system. the techniques used and table used are confidential details of the company. the broad area of migration included databases such as transport , academics , staff , medical , contact and custom

Tools used (Development tools - H/w, S/w): PENTAHO KETTLE, REDSHIFT, MySQL

Objectives of the project: DATA MIGRATION

Outcomes of the project: DATA MIGRATED FROM OLD ERP TO NEW ERP

Major Learning Outcomes: PENTAHO KETTLE , DATA WAREHOUSING, DATA MIGRATION

Brief Description of working environment, expectations from the company: NEXT EDUCATION IS A COMPANY WHICH HAS GROWN UP FROM A START UP TO MID SCALE COMPANY. THERE ARE A FEW ASPECTS OF A BIG COMPANY AND A STARTUP. EMPLOYEES ARE REQUIRED TO COME 6 DAYS A WEEK AND 9 HOURS A DAY. TEAM WORK IS GIVEN IMPORTANCE AND FLUIDITY IS ESSENTIAL.

Academic courses relevant to the project: DATABASE MANAGEMENT SOFTWARE , SQL

Name: Shubham Ranjan (2013B4A30640H)

Student Write-up

Short Summary of work done during PS-II: The work involved product development for the next version of the flagship product of the company. Earlier months consisted of training and learning of tools and technologies relevant to the project. This involved making Proof of Concept apps to demonstrate understanding. After this, active development of the product was undertaken. The final product was an app based on JavaScript web stack. This incorporated technologies like JavaScript, angular, typescript, jquery, NodeJS, etc. By the end of PS, I was working on the remote control interface for controlling the navigation of the app in classroom setting. This was my last project.

Tools used (Development tools - H/w, S/w): JavaScript, TypeScript, AngularJS, Angular, NodeJS, JQuery, MySQL

Objectives of the project: Product Development

Outcomes of the project: Working app for testing

Major Learning Outcomes: Web based technologies, product development

Brief Description of working environment, expectations from the company: The working environment was conducive to software development. Proper seating arrangement and systems were provided. Everyone was approachable. Decision making process should be more fluid and there is room for improvement.

Academic courses relevant to the project: Software Engineering.

Name: Atharv Gupta (2013B4A30781P)

Student Write-up

Short Summary of work done during PS-II: setting up of docker, sentry, grafana

Tools used (Development tools - H/w, S/w): docker, eclipse, nodejs, sentry, kafka, grafana, prometheus

Objectives of the project: setting up the development environment

Outcomes of the project: platform independent running application

Major Learning Outcomes: architecture of the working of the technical department

Brief Description of working environment, expectations from the company: setting up of docker, sentry, grafana

Academic courses relevant to the project: c, oop, os.

Name: Vidya Yalla (2013A7PS100H)

Student Write-up

Short Summary of work done during PS-II: Creating a microservice for adding of academic information of staff in a school management system.

Debugging errors in already existing services.

PDF generation and embedding fonts in PDFs.

Learnt about an Agile framework : Scrum, which is a management and control process that cuts through the complexity to focus on building products that meet business needs.

Tools used (Development tools - H/w, S/w): Spring Framework, Hibernate, Java, Microservices Architecture, JPA Data Repository, AngularJS.

Objectives of the project: Applying the microservices architecture to a web application, Next Learning Platform

Outcomes of the project: Addition of microservice to the web application

Brief Description of working environment, expectations from the company: Since, the company is expanding rapidly there are issues with there not being enough workstations. The employees of the company are friendly and willing to help out. The company expects professional behavior and work on par with its employees.

Academic courses relevant to the project: Object Oriented Programming (CS)

Name: Divy Saxena (2014A8PS0461P)

Student Write-up

Short Summary of work done during PS-II: Developed web applications (including APIs) by implementing micro-services architecture. Worked on JavaScript, AngularJS , Java, Spring, Hibernate and MySQL.

Tools used (Development tools - H/w, S/w): Eclipse, Java, Spring, Hibernate, JavaScript, AngularJS, MySQL

Objectives of the project: To develop web applications for the company's newly launched product using Microservice Architecture.

Outcomes of the project: The project was the part of the company's newly launched product which target schools and their management system.

Major Learning Outcomes: Learned full end-to-end web development. Worked in Java, JavaScript, MySQL, HTML. Learned to use Microservices Architecture for the backend development.

Brief Description of working environment, expectations from the company: The projects were good. My mentor and his team were very supportive and helping. But, the Management was very poor. The intern program was unplanned

Academic courses relevant to the project: Object Oriented Programming

Name: Akash Chintha (2014A3PS0241P)

Student Write-up

Short Summary of work done during PS-II: I've worked as an SDE (Software Development Engineer), here at Next Education India Pvt. Ltd. during my 6 months of internship. Primarily, my tasks were to work on Web Application Development using Micro-service architecture. In July, we had ~20 days of technical training which was just efficient enough for us to cope up with their expectations. In August, my task was to fix the bugs in a module of one of their products. Later on, I was given major tasks and stories which needed to be handled on my own, alongside support provided by respective assigned mentors. Even in cases of dependencies on other modules, we had to communicate with tech heads on our own which could count as managing skills. Overall, it was a wonderful opportunity to explore the world of web development.

Tools used (Development tools - H/w, S/w): HTML, CSS, AngularJS, Spring, SQL, Camunda(Workflow)

Objectives of the project: Development of Web applications using Microservice Design Standards

Outcomes of the project: Design of Microservices using Business Process Automation and Management

Major Learning Outcomes: Web Design and Development

Brief Description of working environment, expectations from the company: Due to higher requirement during the months of Practice School, we were given hefty tasks to handle but just enough time to complete them. They expect us to complete the tasks punctually in time and learning new stuff is common in companies which are still growing. Although we had no fixed desk to work on in earlier months, we were allotted places 2 floors below the tech-team floor. Overall, work environment is satisfactory.

Academic courses relevant to the project: Object Oriented Programming

Name: SIDDHARTHA (2014A8PS0380G)

Student Write-up

Short Summary of work done during PS-II: I was a part of core Product-Development team for Next Education . I was responsible for the development of Application Programming Interface(APIs) as back-end development and User Interfaces(UIs). My work was majorly focused on Microservices Architecture development with Application Programming Interface(APIs) development. Throughout the course of PS2, I developed various features for NextLearningPlatform which is a new product for all stakeholders of school administration.

Tools used (Development tools - H/w, S/w): Java, Angular JS, HTML, Eclipse(for Microservice Architecture)

Objectives of the project: To develop web based application using MicroService Architecture

Outcomes of the project: Developed new features using MicroService Architecture

Major Learning Outcomes: Programming languages such as Java, AngularJS and HTML. Learned about web development applications.

Details of papers/patents: No patents or research paper involved.

Brief Description of working environment, expectations from the company: Working environment of the company is not very encouraging. A compulsory 9-hour clock maintenance with no compensation for extra working hours. Employees might learn about new technologies but no place to relieve work stress. Next Education is a technology-driven company serving the education system in India. Next Education provides innovative products and services which provide solutions for all the stakeholders of K-12 sector. The company has been growing many folds since its inception and is expected to grow in near future.

Academic courses relevant to the project: C Programming, Object Oriented Programming.

Name: Aravind Choutpally (2014A3PS0432H)

Student Write-up

Short Summary of work done during PS-II: Worked on the module of NextInventory which is a part of NextLearningPlatform.

Tools used (Development tools - H/w, S/w): Programming Language used is Java . Learned & worked using bash shell scripting , AngularJS,Hibernate , Spring , MySQL . Running the Application on TomcatServer and Deployed it in a Docker Container .

Objectives of the project: Change the Design of the existing microservice and also create Api's for the new microservice so that the new Api's are backward compatible with the previous ones, and also to improve the Overall performance of the Module .

Outcomes of the project: Learned how to create a web application using the microservices architecture and finished the Work Assigned .

Major Learning Outcomes: Learned how to create a web application, worked on Angular ,java, hibernate Spring MySQL, Spring .

Details of papers/patents: Work Not related to Research , So no papers published .

Brief Description of working environment, expectations from the company: Oh God ! Terrible Work timings , Not true Professional Work Environment .if you Get a good mentor , you might be able to learn a Lot .

Academic courses relevant to the project: OOP, OS.

Name: Aman Nidhi (2013A3PS0400H)

Student Write-up

Short Summary of work done during PS-II: adding feature in the Next learning Platform product(and erp content management software). Worked on the Next student Microservice of this software

Tools used (Development tools - H/w, S/w): Java, SQL, Angular

Objectives of the project: study Microservices Architecture and building web application

Outcomes of the project: Learnt about Microservices Architecture and built web application for the NLP software

Major Learning Outcomes: Learnt different technologies like java and javascript

Brief Description of working environment, expectations from the company: company was crowded

Name: KANCHERLA SAI YASHWANTH REDDY (2014A3PS0192P)

Student Write-up

Short Summary of work done during PS-II: Development of next NLP(WEB application) using java and angularjs

Tools used (Development tools - H/w, S/w): Spring mvc, angularjs, hibernate, mysql

Objectives of the project: Development of next NLP(WEB application) using java and angularjs

Outcomes of the project: Developed is 5 pages in the product regarding students fee

Major Learning Outcomes: Learned how web applications are developed by a team and different technology

Brief Description of working environment, expectations from the company: There was training for 1 and half month . Work was good. Poor management .Nice people bad environment .

Academic courses relevant to the project: Java

Name: Dhwanit Mahajan (2014A3PS0293G)

Student Write-up

Short Summary of work done during PS-II: I worked on Web Application Design and Development for an education sector company-Next Education. I developed applications for the most successful product of Next Education - "Teach Next" which is used by more than 10,000 schools all over India. I developed more than 10 Single Page Applications (SPA) for student assessment.

Tools used (Development tools - H/w, S/w): HTML, CSS, Javascript (AngularJS)

Objectives of the project: To make Web Applications for teachers to make assessment of students easy and fun.

Outcomes of the project: Developed 10 applications which are going to be implemented in the next update of the product in April, 2018. The product will go to more than 10,000 schools.

Major Learning Outcomes: Web Design and Development.

Brief Description of working environment, expectations from the company: There is enough freedom given to you, in Next Education. As an intern, not much attention is given to you and no strict monitoring is done on your work, which is a demerit.

Academic courses relevant to the project: C Programming

Name: Syed Azeem (2014A3PS0185G)

Student Write-up

Short Summary of work done during PS-II: Developing a web applications using Microservice Architecture

Tools used (Development tools - H/w, S/w): Java, Spring, Hibernate, JavaScript, HTML5, AngularJS

Objectives of the project: Developing web application by implementing MVC Architecture.

Outcomes of the project: Developed web applications by implementing MVC Architecture

Major Learning Outcomes: Java, Spring, Hibernate, AngularJS

Brief Description of working environment, expectations from the company: Excellent Learning Environment, Friendly People.

Academic courses relevant to the project: OOPs, DisCo, DSA

Name: Devesh Nag (2014A3PS0305P)

Student Write-up

Short Summary of work done during PS-II: I worked as a part of the Adaptive Learning team at Next Education which uses machine learning models to improve the learning experience of students on their platform. I used information retrieval and natural language processing techniques to develop an automated question answering system that can answer question from any textbook in the database.

The task required the application of both statistical and semantic processing models, statistical models being used to retrieve the section of the database that is likely to contain the answers to a query and semantic models to process the relevant section to obtain the answer to the query. The passage retrieval algorithm ranks the correct passage in the top 3 contenders for 82% of the test cases and the question answering model provides the exact matching answer in 73% of the cases and gives an F1 score of 81.52.

Tools used (Development tools - H/w, S/w): Tensorflow, Stanford CoreNLP

Objectives of the project: To develop an automated question answering system

Outcomes of the project: Developed an automated question answering system with acceptable errors which can be deployed as a product for the company.

Major Learning Outcomes: Use of Deep Learning models for Natural Language Processing; Knowledge Base Construction from Unstructured Data

Brief Description of working environment, expectations from the company: The adaptive learning team is in a nascent stage with less than 10 members. This allowed me the freedom to explore more techniques relevant to my project and come up with innovative solutions. This freedom, however, came at the cost of high expectations from the company as I was required to work on active development of products which required me to have a lot of prerequisite knowledge of the algorithms and techniques being used. The team provides a great environment to deal with such a daunting task. The upper management also supports the team greatly in all its projects creating a good environment for research and development.

Academic courses relevant to the project: Machine Learning; Neural Networks and Fuzzy Logic.

Name: Harsh Vijay (2013B4A10614G)

Student Write-up

Short Summary of work done during PS-II: data migration from the old erp database to the new databases.

Tools used (Development tools - H/w, S/w): Tensorflow, Stanford CoreNLP

Objectives of the project: To develop an automated question answering system

Outcomes of the project: Developed an automated question answering system with acceptable errors which can be deployed as a product for the company.

Major Learning Outcomes: Use of Deep Learning models for Natural Language Processing; Knowledge Base Construction from Unstructured Data

Brief Description of working environment, expectations from the company: The adaptive learning team is in a nascent stage with less than 10 members. This allowed me the freedom to explore more techniques relevant to my project and come up with innovative solutions. This freedom, however, came at the cost of high expectations from the company as I was required to work on active development of products which required me to have a lot of prerequisite knowledge of the algorithms and techniques being used. The team provides a great environment to deal with such a daunting task. The upper management also supports the team greatly in all its projects creating a good environment for research and development.

Academic courses relevant to the project: Machine Learning; Neural Networks and Fuzzy Logic.

Name: Harsh Vijay (2013B4A10614G)

Student Write-up

Short Summary of work done during PS-II: data migration from the old erp database to the new databases

Tools used (Development tools - H/w, S/w): mysql. pentaho kettle

Objectives of the project: data migration

Outcomes of the project: Data migration from old erp to new erp

Major Learning Outcomes: Pentaho kettle, data migration, data warehousing

Brief Description of working environment, expectations from the company: good environment, helpful employees.

Name: k chaitanya krishna reddy (2013B4A20680H)

Student Write-up

Short Summary of work done during PS-II: By End of my PS, I have developed English Lab Report Module and Reports Module in TeachNext Web Application. Out of which, Reports Module is deployed on main server, While English Lab Reports Module is currently under testing and will be deployed in few more months. TeachNext uses Struts Framework which is outdated compared to new frameworks available in the market. Therefore, they have been developing new modules such Next Learning Platform and Learning Management System which are based on newer technologies.

Tools used (Development tools - H/w, S/w): Development of new modules in already existing web application

Objectives of the project: Development of new modules in already existing web application

Outcomes of the project: Developed two new modules using struts framework

Major Learning Outcomes: Web application development

Brief Description of working environment, expectations from the company: Company expects us to work for 9 hrs per day, 6 days a week. Any leave more than 2 days is loss of pay. Similarly, if less than 9 hrs per day will be counted as half day with loss of pay. Working environment is not good compared to other companies, because there is lot of intake compared to space available.

Academic courses relevant to the project: Java

PS-II Station: NextGen PMS Pvt. Ltd - Non IT, Bangalore

Student

Name: Aditya Krishna Kotha (2014A7PS0065H)

Student Write-up

Short Summary of work done during PS-II: Developing responsive dashboards for client specific requirements.

Tools used (Development tools - H/w, S/w): HTML, CSS, JavaScript

Objectives of the project: To make websites.

Outcomes of the project: Learning about the front end web development process

Major Learning Outcomes: Good enterprise coding experience. Experience is building websites from scratch.

Brief Description of working environment, expectations from the company: The company could be a bit more flexible about the timings and let interns have the choice to diversify.

Name: Umang Rustagi (2013B4A70742G)

Student Write-up

Short Summary of work done during PS-II: Created Digital Dashboards for various high profile clients (including Castrol, GAP, Capgemini, etc.) using HTML, CSS and Javascript. Did major front-end work and a little back-end work using python.

Tools used (Development tools - H/w, S/w): HTML, CSS, Javascript and Python

Objectives of the project: Create optimal Digital Dashboards

Outcomes of the project: Created multiple dashboards for multiple clients that load with minimal time.

Major Learning Outcomes: Learnt Javascript

Brief Description of working environment, expectations from the company: The work environment is very friendly and relaxed. Everyone calls each other by their names and there is not much of a hierarchy. Expected to be doing more challenging work than what was provided.

Academic courses relevant to the project: CP, DSA, DBS

Name: Chilaka Ramakrishna (2014A7PS0123P)

Student Write-up

Short Summary of work done during PS-II: Built websites in PS.

Tools used (Development tools - H/w, S/w): javascript,html and css

Objectives of the project: Building Digital Dashboard

Outcomes of the project: Building Digital Dashboard

Major Learning Outcomes: Learnt Javascript in depth

Brief Description of working environment, expectations from the company: very hectic environment

PS-II Station: Nucleus Software Export Ltd, Noida

Faculty

Name: Ritu Arora

Comments: Expectations from industry: Nucleus Software, Noida: Mostly interested in taking students of EEE and related streams, with software skills. Students should prepare themselves for Java programming and related technologies. Good chances of PPO on clearing of a written examination. Company is highly interested in absorbing Bitsians.

Student

Name: Vibhor Gupta (2014A7PS0161H)

Student Write-up

Short Summary of work done during PS-II: Good projects are available in all CS fields-Java development, Web Development, Shell scripting, Machine learning etc.

Tools used (Development tools - H/w, S/w): Java, Jsp, JS, CSS, Spring, Hibernate, Maven

Objectives of the project: Cannot be shared

Outcomes of the project: Cannot be shared.

Major Learning Outcomes: Learned to work on a huge project and industry practices.

Brief Description of working environment, expectations from the company: Decent work but need to work 45 hours a week. Interns can get good projects if they are willing to do the work.

Academic courses relevant to the project: Computer Programming, OOP, DSA

Name: SHIVENDRA KUMAR (2013B5A30621G)

Student Write-up

Short Summary of work done during PS-II: APACHE TOMCAT CLUSTERING

Tools used (Development tools - H/w, S/w): MAVEN, SPRING, APACHE HTTP SERVER, HIBERNATE, INFINISPAN

Objectives of the project: LEARNING AND EXPOSURE

Outcomes of the project: BEING USED IN FINAL PRODUCTION LEVEL CODE

Major Learning Outcomes: JAVA, J2EE, WEB BACKEND Dev, MAVEN, SPRING, APACHE HTTP SERVER, HIBERNATE, INFINISPAN

Brief Description of working environment, expectations from the company: CORE CORPORATE EXPOSURE

Academic courses relevant to the project: DSA, OOP

Name: TUSHAR (2013B1A30883G)

Student Write-up

Short Summary of work done during PS-II: Compared two search engines - solr and hibernate search.

Tools used (Development tools - H/w, S/w): SOLR, Hibernate Search, Java

Objectives of the project: Two find the efficiency of the technologies

Outcomes of the project: Hibernate Search is better in general conditions

Major Learning Outcomes: Learnt the underlying technologies behind search engines

Brief Description of working environment, expectations from the company: More flexible hours are needed. The organization should focus more on latest technologies.

Academic courses relevant to the project: Object oriented Programming, DSA

Name: Shivanshu Dwivedi (2014A3PS0232P)

Student Write-up

Short Summary of work done during PS-II: Automated the complete process for testing the Soap and Restful web services. Created a simple application that only takes the credentials of the DB. Once the username and password are inserted it will automatically fetch data from the DB and starts hitting the Web services.

Tools used (Development tools - H/w, S/w): Core Java, Web Services, Basic knowledge of Databases

Objectives of the project: Automation of Web Service testing

Outcomes of the project: Successfully Implemented it at Organizational Level

Major Learning Outcomes: Learned quite a few technologies like Spring, Hibernate and DBMS.

Brief Description of working environment, expectations from the company: Working environment was good. Employees and mentors were also of very helping nature.

Academic courses relevant to the project: Object oriented Programming

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Brief Description of working environment, expectations from the company: Working environment was good. Employees and mentors were also of very helping nature.

Academic courses relevant to the project: Object oriented Programming

Name: Tapes Bhandari (2014A3PS0209G)

Student Write-up

Short Summary of work done during PS-II: The work I was supposed to do during this period was dynamic code generation using a database driven table model. Basically, I was supposed to generate a screen on which the fields will come just by entering some configurations in the table and you don't have to write even a single line of code for that.

Tools used (Development tools - H/w, S/w): Java, JSP, DBMS, JS, Hibernate and Spring Framework

Objectives of the project: Dynamic Code Generation

Outcomes of the project: Dynamic Code Generation Achieved

Major Learning Outcomes: Basic Knowledge of Programming and DBMS

Brief Description of working environment, expectations from the company: The teammates were very nice and helping to me. They helped me at every step of the project. However, initially we were not given any training on the product itself which we will be working on. So, in that respect, some improvement can be expected.

Academic courses relevant to the project: Introduction to Computer Programming and OOP

Name: Shantam Kumar (2014A8PS0436G)

Student Write-up

Short Summary of work done during PS-II: My project focused on automation of deployment on Application server using GUI and command line scripting.

Tools used (Development tools - H/w, S/w): Net Beans, Weblogic, Eclipse

Objectives of the project: Automation

Outcomes of the project: Automate the process of Deployment

Major Learning Outcomes: How to build a GUI, command line scripting.

Brief Description of working environment, expectations from the company: The work environment in Nucleus Software is good. The mentor is really helpful with any problem that you face. The company has high expectations from a Bitsian which sometimes is tough to reach.

Academic courses relevant to the project: DSA, OOPS, CP

Name: Shrey Gaur (2014A3PS0730G)

Student Write-up

Short Summary of work done during PS-II: Worked on Dialogflow to create a chatbot for helping with loan applications, and also created an asset tracking device based on Arduino.

Tools used (Development tools - H/w, S/w): Dialogflow, Arduino, Neo-6M module, SIM900 module, node.js, Cloud services

Objectives of the project: Create a chatbot and an asset tracking device.

Outcomes of the project: Created a chatbot and an asset tracking device

Major Learning Outcomes: Proficiency with Dialogflow and Arduino chipset, basic node.js commands

Brief Description of working environment, expectations from the company: Working Environment healthy and fruitful, good PS station

Academic courses relevant to the project: OOP, Computer Programming

Name: Nishant Poonia (2014A3PS0244P)

Student Write-up

Short Summary of work done during PS-II: Created a Java Swing based utility to setup the FinnAxia Application on a developer's system.

Tools used (Development tools - H/w, S/w): Java Swing, Batch Scripting, Apache Maven, Apache Ant

Objectives of the project: Automated Setup of FinnAxia Web app

Outcomes of the project: Significant reduction in time of setting up of FinnAxia

Major Learning Outcomes: Learned to work on auto build software like Maven and Ant.

Brief Description of working environment, expectations from the company: Working environment was really good.

Academic courses relevant to the project: OOP and OS

Name: Rishabh Srivastava (2013B5A80674G)

Student Write-up

Short Summary of work done during PS-II: Developed An analytics tool based on deep learning, used to pinpoint anomalies in day to day bank transactions and report the nature of anomaly along with detailed description. The tool was designed to work in both synchronous and asynchronous modes where the user can choose whether to take action by halting business or to just raise an alert.

Tools used (Development tools - H/w, S/w): Spring, Hibernate, Kafka, deep learning 4j

Objectives of the project: The objective was to build analytics capabilities in the existing product

Outcomes of the project: Built an intelligent neural engine to perform fraud analysis

Major Learning Outcomes: Software Design, Scalable Design, RESTful web services, Elastic Search

Brief Description of working environment, expectations from the company: The work in the company depends on the team allotted. Some teams are doing state of the art research while some maintain product. If one shows interest, there is a lot of work in R&D. The company has people in the higher management who are open to new ideas and are ready to try them out.

Academic courses relevant to the project: Machine Learning, OOP, Computer Architecture, OS, Neural Networks, Non-Linear Dynamics, Maths 1&3, DSA

Name: Ashwin Joshi (2013B4A30761H)

Student Write-up

Short Summary of work done during PS-II: I've done 2 projects. One was developing an asset tracking device which is used to track an asset and send the data through an HTTP request to a database and check if it is violating any predefined parameters(speed or geofence). Another project was Google home based loan lending assistant which is used to apply or enquire for a loan and various other services.

Tools used (Development tools - H/w, S/w): Java, C, SQL, JavaScript, JSP, jQuery, JSON, SpringBoot

Objectives of the project: Asset tracking device was developed to track devices given to customers with low credit score. Loan lending is providing a platform for people to apply for loan for home in a simple way.

Outcomes of the project: Learned a great deal of languages like JavaScript and JSP which I had a little experience in. Also worked in SpringBoot which has improved my understanding of Spring MVC.

Major Learning Outcomes: Learned a great deal of languages like JavaScript and JSP which I had a little experience in. Also worked in SpringBoot which has improved my understanding of Spring MVC.

Brief Description of working environment, expectations from the company: Working environment is nice. The work they usually do is mainly on JavaScript, JSP and they give you training prior to that so its not a problem. Overall, its a good company to start your career.

Academic courses relevant to the project: OOPS, DBMS

Name: Vaibhav Singh (2014A3PS0161P)

Student Write-up

Short Summary of work done during PS-II: 1.)Arduino Based Asset Tracking System - It is to help the relation between bankers (Mostly Auto lenders and Agent based companies) and the customers(for example users with bad credit score) to borrow money without risking the portfolio of the bankers/lenders .It's main functionality was to keep track of the asset as well keep it in a fence and check the behavior of the asset movement .

2.)Google Dialog flow based personal assistant-Used google based dialog flow environment to design a chat-bot which is context aware and stores the data (as per business model required) in the database .its main use to ease out the process of giving information to bank .it can be accessed globally with more than 14+ language support.

Tools used (Development tools - H/w, S/w): Arduino UNO, GPS NEO -6M, GSM 900a, DialogFlow, Java, Hibernate, MYSQL, VM, Spring-BOot, WebServices

Objectives of the project: 1) To track the asset(Security for own portfolio) . 2) To ease the form filling process and other easy tasks like checking next emi

Outcomes of the project: the work was appreciated by the executives as well as managers and they are using the concepts in their main product also.

Major Learning Outcomes: Now confident in one language not just i can code but can definitely handle any business level problem.

Brief Description of working environment, expectations from the company: Working environment was good. Even though we are not directly working on the product but are idea and concept was used in one of their product. Company should give more work related to their product not just the Mentor's dream to interns.

Academic courses relevant to the project: OBJECTIVE ORIENTED PROGRAMMING.

Name: Harsh Maliwal (2014A3PS0228G)

Student Write-up

Short Summary of work done during PS-II: Worked with DevOps team at Nucleus- worked on developing shell scripts, building product installers (using Java Swing), and wrote scripts for server deployment (specific to Oracle Weblogic) and server clustering (for Apache Tomcat).

Tools used (Development tools - H/w, S/w): All work was software related, but there are no prerequisites. Formal training is provided for 1 month, with ample time for students to pick up the relevant skills-> Utilized Core Java, J2EE, Java Swing, Spring MVC and Hibernate Frameworks, JGroups, Infinispan, Maven, BASH scripting, Apache Tomcat, Oracle Weblogic, JavaScript (for front-end only), MySQL, and Apache JMeter

Objectives of the project: Deployment was successfully set up, and simultaneously, improvements were made in the installation wizard and installation process for the product

Outcomes of the project: Deployment was successfully set up, and simultaneously, improvements were made in the installation wizard and installation process for the product

Major Learning Outcomes: Acquired new, relevant technical skills that could not have been taught as effectively in a classroom setting; Acquired an in-depth understanding of hierarchies in an IT organization, and the job and expectations from and of various hierarchal members. Acquired an understanding about the various kinds of sub-domains that come under the broad categorization of 'SOFTWARE ENGINEERING.'

Brief Description of working environment, expectations from the company: BITS interns are put in the RnD teams, where they are expected to produce new solutions to old problems. For instance, one of the tasks that I was given was to create an optimized number-to-text converter, which works with Machine Learning, Deep Learning, Artificial Intelligence, or existing APIs, and is platform-independent. Given that the interns are from a Tier 1 college, there is greater expectation on them to meet the given deadlines, and they are expected to be able to cope up with more difficult tasks than their intern peers who maybe from colleges of a lower tier. For BITS interns, it is expected that they be able to manage multiple assignments at the same time, without any dip in the quality of the work, and without slowing down the project deadlines. One of the biggest positives about Nucleus is that the training is useful, the work is instructive, and it is for the most part, actually implemented in the year-end product release, therefore students get an actual feel for what it's like to work in a software team, and they also get to experience the various stages in the life of a software product (development, testing, integration, deployment, etc).

Academic courses relevant to the project: Object-Oriented Programming (Not a Pre-requisite, though)

Name: SAHITYA SETU TAHILIANI (2014A8PS0775G)

Student Write-up

Short Summary of work done during PS-II: I've built a monitoring tool for them through which they can proactively know what exactly is going wrong with their web-application servers in real time and take necessary action.

Tools used (Development tools - H/w, S/w): JAVA,BASH SCRIPTING,SPRING FRAMEWORK,HTML,JSP,JAVASCRIPT

Objectives of the project: MONITORING AND ANALYSIS

Outcomes of the project: THE UTILITY IS BEING DEPLOYED ALL OVER NUCLEUS AND IS LIVE.

Major Learning Outcomes: TECHNICAL EXPERTISE IN JAVA, BASH SCRIPTING

Brief Description of working environment, expectations from the company: Work environment was great, lot of help from my mentors. Work load was a bit much but it was a big learning opportunity and I feel more prepared to face the corporate environment.

Academic courses relevant to the project: OBJECT ORIENTED PROGRAMMING, DATA STRUCTURES AND ALGORITHMS

Name: Siddharth Kumar Singh (2014A3PS0418H)

Student Write-up

Short Summary of work done during PS-II: I developed an artificial assistant to guide a new user through loan lending process through voice and chat based conversations. It was run through multiple test cases and rebuilds to make it smart enough to understand the context of user input and act accordingly. I coded for it to handle user specific loan lending/handling functionalities (loan termination, prepayment, due date, due amount, etc). I then created a real-time database to save all the query based user data into unique documents assigned to every unique user after assigning them unique identification codes. I then coded for the assistant to be able to tell the difference between a new user and an old one (old loan applicant).

After development, I integrated the assistant with Google Home device functionalities, and Google Assistant on Android phones. It now essentially works on all smart devices, with options to extend it to wearables, headsets, etc.

Tools used (Development tools - H/w, S/w): Software tools - Dialogflow, Firebase

Objectives of the project: The broad objective of the project was to be able to develop an artificial assistant that could talk to a user and guide him/her through the loan lending process. The assistant should be intelligent enough to understand the context of the user input and act accordingly within a second. It should be able to secure user details via systemic queries to the user and store the same in a database after assigning a new user a unique identification code.

Outcomes of the project: The project was able to achieve all the objectives set forth in the project vision.

Major Learning Outcomes: Learnt a good deal on Artificial Intelligence, everything regarding an industry grade software development (from conception, to development, to testing and deployment).

Also learnt Spring and Hibernate frameworks and their use in software development.

Brief Description of working environment, expectations from the company: Being here at Nucleus Softwares is an amazing experience to have as an IT aspiring undergraduate. When you start your internship here, you are taken through a two month training program under Training Wing of the company. Those two months are the most you'll ever learn about everything related to software development and come to speed with the academic requirements therein. After the initial two months, you are deployed on the product floors where you are assigned to a mentor who comes up with an innovative project for you to work the remaining 4 months on. The projects are (I feel) very ambitious and demanding, but if you stay put, you learn more than you ever could after 3 years at college. The working environment isn't the best, but it's not horrible either.

Academic courses relevant to the project: Artificial Intelligence, Data Structures & Algorithms, Object Oriented Programming

PS-II Station: Nutanix Technologies India Pvt. Ltd., Bangalore

Student

Name: Sanjeev S (2013B4A70495G)

Student Write-up

Short Summary of work done during PS-II: Worked in the tools and automation team of Nutanix. Worked on improvements in the pre-commit testing tool of Nutanix. Worked on refactoring a data simulator for Nutanix clusters. Also worked on integration of two databases of two internal frameworks.

Tools used (Development tools - H/w, S/w): Ext-JS, Django, Python

Objectives of the project: Improvements in existing internal tools.

Outcomes of the project: Several features and bug fixes were added to the pre-commit testing tool. The data simulator code was made much more maintainable. Integration effects were studied and a report was presented to a team in US.

Major Learning Outcomes: Good coding practices. Maintaining large code bases. Pythonic style of coding.

Brief Description of working environment, expectations from the company: Very friendly people. Quite steep learning curve initially. They expect you to get your work done and good coding practices. Working environment is open style and you get big monitors and a Macbook.

Name: Abhijith Warriar (2013B3A70309G)

Student Write-up

Short Summary of work done during PS-II: Did UI automation using selenium software. Wrote a lot of test cases in python. Worked with django and mongo db

Tools used (Development tools - H/w, S/w): django , mongo DB, selenium

Objectives of the project: Increase the stability of UI testcases

Outcomes of the project: The pass percentage of tests increaased to more than 90%

Major Learning Outcomes: Learned advanced Python, and selenium.

Brief Description of working environment, expectations from the company: The company is really terrific and the employees are very helpful.

Academic courses relevant to the project: Computer Networks

PS-II Station: Nvidia Graphics - Software, Hyderabad

Student

Name: kapil gupta (2013B4A30537H)

Student Write-up

Short Summary of work done during PS-II: Added signing support , package support , build support for mb1-t18x , mb1-t19x chips which helps in improving productivity of products.

Tools used (Development tools - H/w, S/w): Git, flashing boards, harness, Makefiles

Objectives of the project: To add signing support , package support , build support for mb1-t18x , mb1-t19x chips. To add sanity support for GVS, and add ORB automation.

Outcomes of the project: Task done:

1. Added package support for mb1 to build all variants.
2. Integrated signing support with GVS
3. Code migration of t19x code with git history
4. Add sanity support for GVS
5. ORB automation
6. Adding signing support for t19x
7. Add scripts for building and dev-signing t19x MB1 binary.

Major Learning Outcomes: I have learnt about Makefiles, bash script, git, harness, boards, flashing, python, operating system and computer architecture

Brief Description of working environment, expectations from the company: Working environment is very good learnt a lot from my internship.

Academic courses relevant to the project: operating system, computer architecture, microprocessor

Name: Sriram Saranga (2014A3PS0313H)

Student Write-up

Short Summary of work done during PS-II: Fix Bugs & Coverity issues of WiFi, Ethernet, Bluetooth kernel Drivers. Upgrade WiFi, Ethernet, Bluetooth Kernel drivers from previous kernels. Create Python test scripts for automated testing of NVIDIA devices.

Tools used (Development tools - H/w, S/w): Python, Coverity, Syzkaller, Docker

Objectives of the project: To stress test Nvidia devices in different conditions.

Outcomes of the project: Quality of the respective driver of the device.

Major Learning Outcomes: Python scripting, Linux Kernel, Advanced C, Automated testing.

Brief Description of working environment, expectations from the company: Company expects prior knowledge in C and Object oriented programming. rest of all can be learnt here.

Academic courses relevant to the project: OS, OOPS, C programming.

Name: Chekuri Rakesh Krishna (2014AAPS0231H)

Student Write-up

Short Summary of work done during PS-II: Tegra is a System-On-Chip (SOC) series developed mainly for mobile devices such as smartphones, personal digital assistants, and mobile Internet devices. It's basic components include an ARM architecture based central processing unit (CPU), graphic processing unit (GPU), and memory controller. The project aims to resolve coverity issues in the existing code tree regarding dev-kernel team. In addition, the project also aims to find out the code coverage of the existing files and ways to increase the code coverage.

Tools used (Development tools - H/w, S/w): C, GCOV

Objectives of the project: Fix coverity issues and increase code coverage

Outcomes of the project: Fixed all coverity issues and added more tests to increase code coverage.

Major Learning Outcomes: In-depth understanding of drivers and improved coding skills.

Brief Description of working environment, expectations from the company: My knowledge base has been improved to very good extent all because of the training I got here. The concepts I got to learn here are completely new and I could successfully work on the same all through my internship with a whole support from my team mates. My work experience with Nvidia Graphics, Hyderabad undoubtedly gave me a pretty good chance to develop my skill set which helps me to fit into industry and also gave me a clear idea on my interests.

Academic courses relevant to the project: C-programming, Operating systems.

Name: Srikar Bakka (2013B2A30729H)

Student Write-up

Short Summary of work done during PS-II: My work is mainly related to enhancing storage drivers at Nvidia, enabling new features and fixing existing bugs

Tools used (Development tools - H/w, S/w): Coverity, Git

Objectives of the project: To enhance the drivers by enabling new features

Outcomes of the project: eMMC and SD card protocols, git software

Major Learning Outcomes: eMMC and SD card protocols, git software

Brief Description of working environment, expectations from the company: Environment was friendly and very supportive. They expect us to be efficient in C programming and with basic linux commands

Academic courses relevant to the project: C programming, Computer Architecture.

PS-II Station: Nvidia Graphics - Software Systems, Pune

Student

Name: Shivam Arora (2013B2A30840P)

Student Write-up

Short Summary of work done during PS-II: The project aimed in making improvements, solving bugs and adding support for new chips in a virtualized environment for simulated GPU testing. Improvements made in the infrastructure includes support of non contiguous system memory, robustness of various shell scripts involved, support of new chips, support of atomic read/write operations to system memory and renaming all automated driver validation platform components for tests running on our infrastructure to nomenclature. Non contiguous system memory support means, that the guest OS can be booted with any number of DIMMs, where the base address and the size of the DIMM can be specified as a parameter. Robustness of shell scripts involved modularizing all the scripts and adding support for hard failure in case of any command being failed while execution of script. Support of newer chips involved modifying the shell scripts involved in the infrastructure, which basically involved changing the simulated GPU, VBIOS and chip arguments. Atomic operations support on infrastructure involved making the read/write operations to system memory word separated, instead of byte separated which was supported earlier. Bugs solved during the project were, updating a Perl script to consider different remote machines until one live is found, issue in booting guest OS with two simulated GPUs, issue in loading Resource Manager on simulated GPU and launching guest OS (Win7 64 bit) on the infrastructure. Updating a Perl script until one live is found involved keep pinging the machines in a loop, until a response is not achieved. Two GPUs couldn't be booted, since for one GPU, some functions were being called which were not expected (segmentation fault). Issue in Resource Manager involved writing specific values to specific registers, information regarding this has to be parsed from configuration file. Win 7 64 bit support involved attaching debugger (WinDbg), debugging for known issues and getting them resolved by collaborating with other teams.

Tools used (Development tools - H/w, S/w): C programming, Shell and Perl Scripting, GDB (GNU Debugger)

Objectives of the project: Improvements were made in the simulated environment, which made debugging and testing easier. Support for new chips were added for testing. Various bugs were solved.

Outcomes of the project: Debugging, Shell Scripting, Perl Scripting

Major Learning Outcomes: I have learnt about Makefiles, bash script, git, harness, boards, flashing, python, operating system and computer architecture

Brief Description of working environment, expectations from the company: Working environment very good. People are very friendly and helpful. A lot of scope for learning. Free breakfast, lunch, snacks and dinner is available.

Academic courses relevant to the project: Operating Systems

Name: Akash Nair (2014A3PS0330G)

Student Write-up

Short Summary of work done during PS-II: Designed mobile app for setting up of multi display set up(Mosaic).Mosaic is an application for running multiple displays as a single large screen. The mobile application gives the user complete control over the mosaic service from the application itself.For this task the application was written in swift 3.

Tools used (Development tools - H/w, S/w): Xcode, git, android studio

Objectives of the project: to design a mobile application for Mosaic

Outcomes of the project: Provided proof of concept of the app which would undergo further development.The application is able to set up Mosaic on a multi display set up.

Major Learning Outcomes: Learnt about swift,IOT, and basics about websockets

Brief Description of working environment, expectations from the company: the working environment is great. the hours are flexible,Interns are given as good projects as regular employees.

Academic courses relevant to the project: OOP,DSA

Name: Tarun Raghav (2013B2A80829P)

Student Write-up

Short Summary of work done during PS-II: The goal was to make improvements to the kernel mode driver of NVIDIA™s Linux graphics driver by increasing test coverage, improving build infrastructure and fixing numerous bugs. Test coverage was to be improved by adding tests to NVIDIA™s test servers. Test scripts for FreeBSD and Solaris were developed which procured latest driver builds from the local server and conduct basic sanity tests. A test application was developed for a new power saving feature which was to be introduced on Linux. An Automation script was written for encoding and decoding customer sent bug reports. A new kernel configuration detection test was written for specific kernel source functions. An Automated test was written to check kernel build success against all supported kernel versions. Bugs relating to Linux kernel mode driver module were solved as and when assigned.

Tools used (Development tools - H/w, S/w): bash scripting, tcl scripting, c++ programming, perforce, git.

Objectives of the project: Develop and deploy test scenarios for improving and automating test coverage of NVIDIA GPU kernel driver across various Unix platforms and also work on defect resolution to improve quality of NVIDIA GPU kernel driver.

Outcomes of the project: Deployed several nightly and per change tests, solved several bugs, proposed driver build architecture enhancements.

Major Learning Outcomes: Shell scripting, Unix programming, Debugging skills, working with linux kernels, Nvidia gpu architecture, version control systems, teamwork.

Brief Description of working environment, expectations from the company: The Company has a very positive and flexible working environment.

Academic courses relevant to the project: C programming, Operating Systems.

PS-II Station: Nvidia Graphics - Hardware, Bangalore

Mentor

Name: Deepank Gupta

Designation: Sr. ASIC Manager

Dhruv contributed in critical areas and has made a good impact. He proved to be a good team player too and has gelled well with the team. He ramps up quickly too. His Key responsibilities: Chip Build enhancements. Dhruv worked on Chip Build enhancements where creating an Utility to help kick start a new project for Tegra. It has helped in reducing the kick start time from 5 weeks to 2 weeks. Dhruv - ramped up on Perl/Python to create this Utility. Studied the build infrastructure Created Utility post his study Created wikis for the steps Everything was achieved as per plan and timelines. Partitioning Checks Dhruv worked on Adding checks to make sure we add Partitioning checks for Tegra. This will help in hashing out physical vs. front end issues early in project cycle. For this he had to ramp up on Partitioning hashes , Check requirement and then implement the checks. Goal was achieved. He showed good skills in digging up.

Name: Pranava A Rai

Designation: Senior Architect, GPU HW

Project Details(Key responsibilities):

1. Similarly:
 - a. A tool/framework for identifying similar tests amongst directed-performance and app-performance nvdpdm catalogs.
 - b. Developed from scratch, in python, and uses a visualization frontend called bokeh for presentation/interactive UI
 - c. Uses traditional machine learning techniques “ PCA, mean-square cost
2. Determine performance coverage of directed tests
 - a. Use Similarly (from above) to determine the coverage of the directed performance suite of gpu-tests
 - b. Work-In-Progress

3. Statistical analysis of GPU performance monitors
 - a. Use Pearson Coefficient to rate GPU PMs (collected during 1. above) to study existence of any relationships/patterns between GPU performance scaling and size
 - b. Work-In-Progress

Internship Assessment:

- â€¢ Met the primary objectives assigned to him as per schedule.
- â€¢ Showed initiative, diligence and an aptitude for independent thinking.
- â€¢ When presented with problems outside his scope of knowledge, demonstrated ability and willingness to learn.

What we look for in interns/candidates:

- â€¢ Diligent, hard-working mindset
 - o In pursuit of excellence we will fail, and we will fail often. Any candidate that fits into this culture of excellence must be intellectually honest even when the news is bad and a high work rate without getting fazed or lost by the inevitable failures that they will face along the way.
- â€¢ Aptitude for independent thinking
 - o Unique problems need unique insights to be solved. This calls for creativity and independent thinking â€” even in the face of established ideas that may seem contrary. If the problems can be solved just by having the knowledge from a prescribed text then almost anyone can solve them.

Name: Sudhakar Raju

Designation: Verification Lead, Tegra-PCIe

Comments on Monil Shah:

- 1) Work discipline and ownership: He is dedicated and takes good ownership of tasks and works on them. When he is stuck and provided a clue or direction he works well to get the closure on a given task.
- 2) Communication: He proactively asks questions to understand a given assignment. He will ping whenever he is stuck and seeks help.
- 3) Reviews: He initiates reviews for the code for any small change on his own without being asked

- 4) He is more confident on PCIe Transaction Layer spec as of now and also exposed to some portion of logical physical layer.
- 5) Contributions: Monil contributed well for PCIe regression debugs and adding simple code fixes in the testbench. His contributions are listed below.
 - a. Regression monitoring.
 - b. Merging of Coverage and numbers generation.
 - c. Verification script modifications.
 - d. PCIe spec reading and presentation.
 - e. Regression failures debug.
 - f. Test cases addition for PCIe Application Layer coverage holes.
 - g. Started testbench fixes which were deprioritized earlier
- 6) He will work on TB fixes and triaging for the remaining internship period.
- 7) Areas for improvement: He can improve depth in PCIe spec knowledge and ask more doubts from spec understanding perspective.

Name: Sivakumar Anandan

Designation: Sr. ASIC Manager

Work done by the PS-II students: FPTR tests resurrection, Verification.

Interactions with them: Good, Pro-active.

Highlights of major achievements: enabling Bin Opt Verif - WIP

Outstanding student characteristics: Dedication.

What do they look for in interns: Dedication, Smartness, Agility.

Name: Roshan Paul

Designation: ASIC Engineer, Memory Subsystem Verification

Work done by the PS-II students: In interns, we look primarily for the attitude to learn and solve any problems coming along their way. Design Verification is an interesting domain to work on due to a lot of challenges and complexities associated with the same. The attitude of attacking a problem statement by breaking into smaller problems, coming up with solutions for them and not hesitating to take help whenever blocked are some nice attributes we look for. Somesh helped in increasing productivity for the entire team by automating rerun of specific failures from test suite regressions as soon as they occur, he created another flow to generate coverage reports which is essentially the measure of quality of test suite and got exposed to design verification challenges by creating a checker for our pipelined design. The commitment and seriousness given to the tasks worked on and the attitude of unblocking himself by asking questions are his strengths. This enabled him in quickly grasping relevant concepts and to create some beautiful code.

Name: Praveen Wadikar

Designation: Principal Architect

Work done by the PS-II students: Sowmya mainly worked on following

- 1) Enhancing the SCSIM+MMPLEX TB
- 2) Host1x SystemC model
- 3) Understanding the regression infra etc

Sowmya was able to understand the host1x model. She fixed the model for issues reported by SW especially on error signalling in host1x. She was able to improve the Host1x regression from 60% to 75%+

Overall

- 1) She is good in SystemC
 - 2) Understands the modeling infrastructure and flows
 - 3) Has good ability to model and support SW team
-

Name: Sandeep Trasi

Designation: Manager, System Software

Work done by the PS-II students: Khushal was involved with Linux toolchain and filesystem activities. He spent his time engineering test infrastructure to build confidence in the deliverables generated through use of toolchain. He was able to successfully debug and triage toolchain sysroot use case. Furthermore, he added features to the filesystem test script. A final part of his project included integrating GCC test suites into the test framework. A weekly meeting was scheduled to ensure progress and status were tracked. An appreciation is extended to Khushal for his contributions; he should continue to develop his software skill sets and knowledge in toolchain (development, testing, and usage), which will enable him to reach the next level achievement.

Name: Raghava Tyagi

Designation: Sr. Software Architect (Hardware Infrastructure Team)

Work done by the PS-II students: Internship Assessment

- o Good studious temperament
- o Initially used to shy away from problems, but got better with time
- o Very responsive, provided regular updates
- o Strong problem solving
- o Finished all the goals of the project along with stretched goals
- o Project has been released and user have appreciated the efforts

Top 3 strengths

- o Good problem solving
- o Good cultural fit
- o Right temperament

Top 3 development areas

- o Take up computer science courses in the last semester

- o He should focus more on solving the problem rather than using workaround to complete the project.
- o Should not over stress

Work done by the Student, interactions with them:

Shubhi primarily worked on developing test scripts for display module. She also worked on analysing and documenting ioctl calls between userspace and kernel.

Highlights of major achievements, outstanding student characteristics:

We would like to appreciate the way she went around with the tasks assigned to her. She took up any task assigned to her, she's very well motivated and tries to get the work to conclusion. Takes feedback and is eager to learn.

What we look for in interns:

We don't expect any particular expertise from interns. But few things that can be improved:

- i. Better grasp on programming languages and computer science basics.
- ii. Prepare them on practical front.

E.g.: Generic Linux usage, command line usage, Embedded systems basics, etc.

- iii. Improve PS application process to give students an idea of what they can expect to work-on after joining any given organization (may be feedback taken from older students can be provided to applicants).

Finally, really appreciate the effort BITS has taken in terms of Practice School. I feel PS gives Students an experience of the real-world work environment. This will surely help the students in deciding on their future goals.

Name: Naveen Kumar S

Designation: Senior System Software Engineer

Work done by the PS-II students: Work done by the Student, interactions with them:

Shubhi primarily worked on developing test scripts for display module. She also worked on analysing and documenting ioctl calls between userspace and kernel.

Highlights of major achievements, outstanding student characteristics:

We would like to appreciate the way she went around with the tasks assigned to her. She took up any task assigned to her, she's very well motivated and tries to get the work to conclusion. Takes feedback and is eager to learn.

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Finally, really appreciate the effort BITS has taken in terms of Practice School. I feel PS gives Students an experience of the real-world work environment. This will surely help the students in deciding on their future goals.

PS-II Station: Of Business.com, Gurgaon

Mentor

Name: Bhuvan Gupta

Designation: Co-Founder

Company expects students to pick up latest Java related-technologies in as much less time as possible.

Company provides guidance and support the same. Fast-paced work is expected out of the students.

Immense learning opportunity for budding engineers.

Faculty

Name: Ritu Arora

Comments: Expectations from industry: Owned and run by an ex-Bitsian, good company with immense learning opportunities in a small setup.

Student

Name: Shourya Punj (2013B4A30746G)

Student Write-up

Short Summary of work done during PS-II: Developed the tender crawler framework which provides data for company's newly launched Bid-Assist app and website.

Tools used (Development tools - H/w, S/w): Java, Spring Boot, Maven, Redis, S3, GitHub

Objectives of the project: Back end development of tender crawler framework for Bid Assist

Outcomes of the project: Crawls tender on daily basis fetching approx 7000 tenders daily.

Major Learning Outcomes: Learnt about different technologies like Java, Spring Boot, Maven, Redis, GitHub, S3

Brief Description of working environment, expectations from the company: Mentors were good and will help you out in almost every difficulty that you face. Great learning curve in this startup but company expects you to perform and deliver on time from day one.

Academic courses relevant to the project: OOP

Name: Abhinav Rajput (2014A8PS0460G)

Student Write-up

Short Summary of work done during PS-II: Front-End Development

Tools used (Development tools - H/w, S/w): JavaScript, ReactJS

Objectives of the project: Developing Front-End CRM

Outcomes of the project: Developed Front-end of CRM

Major Learning Outcomes: Javascript and UI/UX Design

Brief Description of working environment, expectations from the company: Comfortable and Helpful

Name: Sarthak Garg (2014A3PS0217P)

Student Write-up

Short Summary of work done during PS-II: The project allotted to me was a live project, now released and publicly available at <https://bidassist.com>. During PS-II, my contributions into the project were largely on the back-end part. I worked on developing an efficient crawler system in Java, using Asynchronous HTTP clients and Jsoup libraries. Apart from writing parser codes for 67+ govt tender domains, fetching 7000+ fresh tenders every day, I also worked on designing aspects of the core crawler framework and its optimizations. Besides, my job also included making front-end patches using Javascript React, and CSS3.

Tools used (Development tools - H/w, S/w): Technologies used were primarily back-end related, including, and not limited to, Java, Spring-boot, Maven, Redis, Jsoup, Asynchronous HTTP clients and Selenium web drivers. Also GitHub was used extensively for code collaboration purposes, and the standard Javadocs for the documentation part.

Objectives of the project: At OFB, the objective of this project was to develop an efficient crawler system that would fetch tender data and information from the govt. websites, and then serve as the back-end database for company's new web product BidAssist. BidAssist is a new generation state-of-the-art Lead Management System that empowers OFB's new businesses, en route also making the company India's largest non-govt, non-profit tender aggregator. The objective was to crawl tenders in bulk, with maximum code reusability, and reach a stable target mark of 7000+ new tenders each day. The target has been duly met and the application tested thoroughly, making it virtually self-reliant and with the need of minimal maintenance.

Outcomes of the project: The outcomes of the project were in accordance to the project objectives, and fall in line with the work summary as mentioned in above sections.

Major Learning Outcomes: There were tremendous learning outcomes from the project in all the web development technologies as mentioned above. Besides, working on the project, we also got greater insights into the concepts of networking and AI as these were the cornerstones of BidAssist's crawler framework.

Brief Description of working environment, expectations from the company: The working environment in the company was borderline hostile. The office doesn't treat interns well and interns are often outcasted from all the company happenings. The behavioural etiquettes of the CTO are a sheer disgrace, and interns are often verbally and severely bashed for even company's own faults and mismanagement. Derogatory remarks on one intern went as far as their family backgrounds one time. Besides the company's way of managing things is largely haphazard and utterly unorganized, and no clear objectives/targets are ever set. Forget appreciation, no acknowledgement of the work done by interns is ever made and company is always looking for cheap outsourcing of their work from students of, as they say, lower tier colleges.

Academic courses relevant to the project: Object Oriented Programming (OOP), Information Retrieval (Natural Language Processing)

PS-II Station: Paypal, Chennai

Student

Name: Arnav Dixit (2014A7PS0084G)

Student Write-up

Short Summary of work done during PS-II: Part of a team which handled the launch of PayPal in India. Had to work on different aspects of product development, making small changes to existing codebase to make the products compatible for the Indian market

Tools used (Development tools - H/w, S/w): NodeJS, React, Pig Latin, Pymongo

Objectives of the project: PayPal launch in India

Outcomes of the project: Successfully launched

Major Learning Outcomes: How to approach a project, production line coding

Brief Description of working environment, expectations from the company: The work environment is very amiable. The employees are ready to help you at every point of the project

Name: Niranjana sooda (2014A7PS0008H)

Student Write-up

Short Summary of work done during PS-II: Unit testing and end to end functional testing of enterprise dispute management

Tools used (Development tools - H/w, S/w): IntelliJ, postman

Objectives of the project: IntelliJ, postman

Outcomes of the project: Provide dispute resolution to large merchant with best quality

Major Learning Outcomes: Spring, java8

Brief Description of working environment, expectations from the company: Working was fun. No pressure. Expectations were to push the people and make our things work

Academic courses relevant to the project: OOP

Name: Taveesh Sharma (2014A7PS0121G)

Student Write-up

Short Summary of work done during PS-II: Developed an ARIMA time-series based forecasting model for PayPal's merchandise gross loss.

Tools used (Development tools - H/w, S/w): Teradata SQL, Microsoft Excel, Python, R

Objectives of the project: To improve Paypal's accuracy for loss forecasting

Outcomes of the project: Initial stage completed successfully. Needs more improvement.

Major Learning Outcomes: Learnt about scientific computing in R. Improvement in DBMS skills, Business skills.

Brief Description of working environment, expectations from the company: Great Opportunity. Good Working Culture and great people to work with.

Academic courses relevant to the project: Operations Research

PS-II Station: Petasense - Embedded Software, Bangalore

Student

Name: Sai Pranav Ch (2013B3A30566H)

Student Write-up

Short Summary of work done during PS-II: Setup test environment for mbed based product. Written few firmware tests for the same product. Worked on data compression for a product called Mote to reduce data transmission time over WiFi and thus improve battery efficiency of the product.

Tools used (Development tools - H/w, S/w): Greentea, Cpp, Python, Squirrel

Objectives of the project: 1. Setup test environment for mbed based product to test firmware. 2. Investigate feasibility of using compression algorithm on the Mote to improve battery efficiency.

Outcomes of the project: 1. Setup of the test framework is successful and been able to write tests for few modules of the firmware code and run the tests.

2. The Imp chip on the Mote is unable to handle bit level programming due to its limited resources and thus compression on the Mote is impractical as computational requirements of the Imp cover any power saving from the compression.

Major Learning Outcomes: 1. Conduct research and development for a product or a feature of a product.

2. Better understanding of software development and testing.

Brief Description of working environment, expectations from the company: Petasense is a small company in the IIoT space with rapid growth. In embedded field, the team is really small but top notch. Interns are expected to be playing a supporting role to the developer team with testing and conducting experiments. The overall experience in the company is amazing. Very good team. One can learn about any line of work the company does directly from the team members over personal interaction and can even contribute to the company in the field.

Academic courses relevant to the project: Communication Systems

PS-II Station: Petasense - Machine Learning, Bangalore

Student

Name: K Akhil Chakravarthy (2014A7PS0092H)

Student Write-up

Short Summary of work done during PS-II: We had my work in various fields like web development, data analytics, machine learning etc. Primary project was related to full stack web development where we had to make the main manufacturing app for testing the product completely before it is sold to the customers. Some other project involved using ML and data analytics to detect battery anomalies.

Tools used (Development tools - H/w, S/w): AngularJs, ReactJs as front end JavaScript framework. Flask Python as back end framework.

Objectives of the project: To create a web application and implement a model for anomaly detection.

Outcomes of the project: Successfully implemented the requirements needed.

Major Learning Outcomes: Learnt a lot in the field of full stack web development and got an idea of how to implement data analytics models in python.

Brief Description of working environment, expectations from the company: It's a small startup with about 10 employees in Bangalore. People are very friendly and helping in nature. 5 day working per week like most other IT companies in banglore and sometimes you might have to stay a bit late than usual depending upon the load of work.

Academic courses relevant to the project: Machine Learning

PS-II Station: Petasense - Services & App Development, Bangalore

Student

Name: Ekansh Jain (2014A7PS0771G)

Student Write-up

Short Summary of work done during PS-II: My work revolved around web-development and devops. The first project was to redesign the manufacturing app of the company. The app has its frontend written in AngularJS and the backend written in Flask. So, I had to learn these technologies and use them to redesign the app. The second project involved redesign of the backend architecture which was a monolith to a microservices based one. This involved the use of Docker for creating containers and Kubernetes to be used as the orchestration platform for the docker containers. The concept behind the microservices architecture, their uses, the communication between different services was something that has to be done.

Tools used (Development tools - H/w, S/w): AngularJS, Flask, Docker, Kubernetes

Objectives of the project: For the first project the objective was to completely redesign the manufacturing app of the company. The objective of the second project was to refactor the backend architecture to microservices architecture from the current monolith one.

Outcomes of the project: The outcome of the first project was a much better, cleaner, stable and more streamlined manufacturing app for the company which led to increased efficiency of the manufacturing environment. The outcome of the second environment was that

Major Learning Outcomes: The main takeaway was to actually work on these technologies in real life. Identifying points of failure, optimizations to achieve speed up in data access, using version control to make changes to a large repository, adopting best practices for software development in general were some of the key learnings. Learning about the workflow conceptualizing and planning a product, writing clean, modular code with documentation, pushing it to production post peer review and monitoring the performance to identify issues.

Brief Description of working environment, expectations from the company: The working environment is highly friendly. The people don't treat you as interns but as their peers. There can be long working hours, but the amount of learning you take away compensates for everything. The work mainly revolves

around web-development. But, one of the main selling point of the company is machine learning and there is a lot of scope for projects in that area too.



PS-II Station: Qubole, Bangalore

Faculty

Name: Uma Maheswari Natarajan

Comments: Expectations from industry: Data analytics, Cloud computing

Student

Name: vaibhav beriwala (2014A7PS0043P)

Student Write-up

Short Summary of work done during PS-II: Worked as a developer in Hadoop team. As a part of Hadoop team worked on few projects related to code improvements in hadoop. My major project was related to using Apache Knox as a single Hadoop gateway for proxying all Hadoop related services.

Tools used (Development tools - H/w, S/w): Hadoop, NGINX, Apache Knox

Objectives of the project: migration from using Cluster-proxy to Apache Knox for proxying all Hadoop related services

Outcomes of the project: Helped me learning about the inner workings of Hadoop, NGINX, Apache Knox

Major Learning Outcomes: Learned a lot related to shell scripting, NGINX, Hadoop and Apache Knox

Details of papers/patents: People in Qubole are always ready to help and clear your doubts whenever you need them to. One cannot find work culture better than that of Qubole's in any other company/startup. You will get to learn about the current trends in Big Data technologies and the inner workings of some of the tools used in this industry. As a fresher, the company provides you one of the best learning environments.

Name: AMEY Agrawal (2014A7PS0148P)

Student Write-up

Short Summary of work done during PS-II: At Qubole we are developing a platform for distributed deep learning as a service, Focused towards providing a reliable solution which blends well with the existing Qubole ecosystem.

Tools used (Development tools - H/w, S/w): Bash, python, scala, Jenkins

Objectives of the project: Building deep learning cluster

Outcomes of the project: Deep learning cluster v0

Major Learning Outcomes: Shell scripting

Brief Description of working environment, expectations from the company: Good work environment, free lunches.

Name: Abhishek Dixit (2013B3A70833P)

Student Write-up

Short Summary of work done during PS-II: At Qubole is currently using a combination of Ganglia and Datadog for monitoring its clusters on various cloud platforms like Amazon, Azure and Oracle. However, the present Ganglia and Datadog monitoring solution has certain disadvantages like non-interactive user interface, high disk space usage, and being expensive. Therefore, the alternative is to explore if it is possible to replace the existing Ganglia and Datadog monitoring framework with an effective open source solution like Prometheus or Influxdb

Tools used (Development tools - H/w, S/w): Shell script, Java, Scala, Python, Prometheus, Influxdb

Objectives of the project: Explore a monitoring framework for Qubole

Outcomes of the project: Integrated Prometheus with Qubole Data Services

Major Learning Outcomes: Knowledge about monitoring frameworks, shell scripts, java, scala, python

Brief Description of working environment, expectations from the company: Qubole provides great learning experience and has awesome work culture.

Name: Namrata A Shettar (2013B4A70668G)

Student Write-up

Short Summary of work done during PS-II: Notebooks are a vital component of the QDS (Qubole Data Service) platform. They are used by a wide range of customers with different needs such as data analysis, data management, data extraction and so on. The tasks that I had been assigned were mainly

of the objective to understand the different aspects of QDS notebooks, modify existing features and add to the existing features to enhance the product.

Tools used (Development tools - H/w, S/w): Ruby on Rails, Postman, Git, AWS

Objectives of the project: Develop features and enhance existing features of Qubole Data Service (QDS) notebooks on the Middleware side.

Outcomes of the project: Features being used in the company's services/products

Major Learning Outcomes: Ruby on Rails, Understanding the whole software development cycle

Brief Description of working environment, expectations from the company: Very friendly environment where people are ready to help if needed. Even though there is a relaxed work culture, people are committed towards their work. There is not much pressure to meet deadlines as such and tasks are assigned depending on how much one can/wants to take. By the virtue of it being a growing start-up, one can see one's code going into production, this may not be the case in established companies.

Academic courses relevant to the project: Object Oriented Programming, Computer Programming, Principles of Programming Languages

Name: Ankur Raj (2014A7PS0134H)

Student Write-up

Short Summary of work done during PS-II: I was assigned the QA team. My project was adding multi-cloud support in the ui-tests framework that the company used. The old code was written only for aws clouds. I added support for azure and oracle clouds in the codebase and also made the code base cloud agnostic. The codebase was written in java and also used Maven, Cucumber and Selenium as the automation and regression test suite. I worked across multiple vertical teams like ACM, Analyze, Explore, etc, which are basically different pages supported in the qubole data service.

Tools used (Development tools - H/w, S/w): Eclipse, Maven, Selenium, Cucumber, Bitbucket, Jenkins

Objectives of the project: Adding multi-cloud support in the ui-test framework

Outcomes of the project: Made the test framework cloud agnostic

Major Learning Outcomes: UI automation, a bit of API automation, use of various tools mentioned above.

Brief Description of working environment, expectations from the company: The working environment was very comfortable. All the employees were ready to help whenever we had any doubts. The lunch bill reimbursement was a big plus. The office is in a nice area. Expectations: More focus on azure customers as there are not a lot of competitors currently in the market. Using more cutting-edge technologies.

Academic courses relevant to the project: Object Oriented Programming, DSA, Networks(little bit).

Name: Mayur Bhosale (2013B3A70556G)

Student Write-up

Short Summary of work done during PS-II: I was allocated UI team so, for initial one month I was just fixing bugs and doing improvements in the UI. Then for about a month after that I worked on moving test infrastructure to CI pipelines. For majority part of the rest of the internship, I was working on revamping the feature roll out infrastructure.

Tools used (Development tools - H/w, S/w): Ruby(mostly), JQuery, Ember, Node.js, Docker, Python, Java

Objectives of the project: Revamp Feature Rollout Infra

Outcomes of the project: Revamped Feature Rollout internals

Major Learning Outcomes: Coding Practises.

Brief Description of working environment, expectations from the company: Qubole has an amazing work culture and everyone from top managers to co-workers are very approachable. The project allotment is at random mostly (still, do fill out the bio carefully) but, irrespective of team you get, they will ensure that the work matches your capability.

Academic courses relevant to the project: Object Oriented Programming

PS-II Station: ReportGarden Technologies Pvt. LTd., Hyderabad

Student

Name: Aditya Deswal (2014A5PS0520P)

Student Write-up

Short Summary of work done during PS-II: I worked in Tech team for 4.5 months and Data team for 1 month and Understanding of software and data part required by the company. i worked on adwords connector which hit API and process the data. and for other 1 month we wrote SQL query to fetch data from meta-base according to requirements

Tools used (Development tools - H/w, S/w): IntelliJ

Objectives of the project: To develop reporting modules (Connectors) for the app

Outcomes of the project: Understand how to develop things and thing to take care in software development

Major Learning Outcomes: Basic Understanding of Flow and back-end work in software development

Brief Description of working environment, expectations from the company: Working environment was very good and helping and Better than my expectations, I got development work , which I learned from scratch and Understand how company works. Overall Experience was very good and learnt a lot during this period

Academic courses relevant to the project: Object oriented programming.

Name: Sneha Mandad (2014D2TS0987P)

Student Write-up

Short Summary of work done during PS-II: Worked on content marketing, e-mail marketing and On & Off page SEO

Tools used (Development tools - H/w, S/w): WordPress

Objectives of the project: To learn various aspects of marketing

Outcomes of the project: Successfully published blogs and articles and pages

Major Learning Outcomes: Marketing Strategies

Brief Description of working environment, expectations from the company: Working environment is very Friendly and employees helps you in every possible way.

Academic courses relevant to the project: PAVA, Creative Writing, Copy Writing

Name: Aditya Sharma (2013B4A40704H)

Student Write-up

Short Summary of work done during PS-II: Report Garden generates meaningful reports for clients. These reports are made by using third party APIs. The reporting module is being updated. I worked on Reporting v2.0. I worked on two connectors for the same.

Tools used (Development tools - H/w, S/w): IntelliJ Idea, Java, Gradle, Junit, Git, GitHub

Objectives of the project: Software Development

Outcomes of the project: Developed two connectors for Reporting v2.0 - Google Search Console and Bing Ads

Major Learning Outcomes: Application of Object Oriented programming, Developing softwares and collaborating and working with others

Brief Description of working environment, expectations from the company: The working environment provides a platform to take responsibility for your work and learn in the process. The deadlines are flexible provided there is a genuine reason for not meeting the deadline. The company structure is more horizontal than vertical.

Academic courses relevant to the project: The working environment provides a platform to take responsibility for your work and learn in the process. The deadlines are flexible provided there is a genuine reason for not meeting the deadline. The company structure is more horizontal than vertical.

Name: Rohit Agrawal (2013B1A20375P)

Student Write-up

Short Summary of work done during PS-II: Launching of new features for the company and taking care of requirements from product side

Tools used (Development tools - H/w, S/w): SQL, Appcues

Objectives of the project: Launching of new features for the company and taking care of requirements from product side

Outcomes of the project: New features and improvement in earlier features

Major Learning Outcomes: Product management

Brief Description of working environment, expectations from the company: Working environment was good and employees of the company cooperative.

Academic courses relevant to the project: Principles of Management.

Name: Kondle manovihari (2014A7PS0140P)

Student Write-up

Short Summary of work done during PS-II: Project on automation for front end GUI testing and monitoring deployments, app performance

Tools used (Development tools - H/w, S/w): Ruby, Capybara

Objectives of the project: Front end GUI testing

Outcomes of the project: app performance

Major Learning Outcomes: Git, Ruby

Brief Description of working environment, expectations from the company: Git, Ruby

Name: Nilesh Naraniwal (2014ABPS0847P)

Student Write-up

Short Summary of work done during PS-II: Implemented Features for AdFlow(Facebook AdManager) and worked on react.js FrameWork for client side and ROR framework for server Side. Also designed Validation form in front-end to make app more user Friendly. Also used Flow Redux with React.js

Tools used (Development tools - H/w, S/w): software development

Objectives of the project: Frontend Development of AdFlow App

Outcomes of the project: App is more reliable and user friendly and have more features to work fast.

Major Learning Outcomes: FullStack Development of Desktop App

Brief Description of working environment, expectations from the company: work Environment is good, people are very helpful.

Academic courses relevant to the project: Object Oriented Programming

Name: Abhinav Marla (2014AAPS0230H)

Student Write-up

Short Summary of work done during PS-II: I was one among the 3 interns in the Product team. I undertook multiple tasks such as MQL-SQL analysis, third party app integrations, competitor analysis, etc. The 2 projects that stood out for me, were 'user flow changes' and 'new feature addition'. In the user flow changes project, I was given a task of improving the user flow in the main feature of the app. I had to prepare a product requirement document and coordinate with the tech and design team for execution. In the new feature addition project, I handled all product aspects such as validation, making the PRD, coordinating with the tech team and design team, designing go-to-market strategy and coordinating with marketing and sales teams.

Tools used (Development tools - H/w, S/w): excel, SQL

Objectives of the project: Improving UX, offering a new feature to clients

Outcomes of the project: The product side requirements were executed.

Major Learning Outcomes: I learnt a lot about product management through the projects.

Brief Description of working environment, expectations from the company: As it is a growing start-up, you'll be given a lot of freedom and will get a chance to work on live projects. For me, it was very satisfying to see something that I worked on to be added to the product and generating value for the company and the customers. The work environment is nice. The employees are friendly. You'll be motivated to work.

PS-II Station: Rite Infotech Pvt Ltd, Faridabad

Student

Name: ADITYA VIKRAM (2013B4A30460H)

Student Write-up

Short Summary of work done during PS-II: I worked on image processing and machine learning. The company mainly deals with Financial Institutions so there is a lot of work related to image processing.

Tools used (Development tools - H/w, S/w): python, anaconda

Objectives of the project: detection of patterns in images

Outcomes of the project: Successfully developed an algorithm that met the objectives outlined by the company

Major Learning Outcomes: Learned a lot about machine learning, image processing and programming in python

Brief Description of working environment, expectations from the company: It is a small company (~100 people) but the work given to us was extremely interesting. If you work regularly, you will get to learn a lot.

Academic courses relevant to the project: Image Processing, Machine Learning

PS-II Station: S.R. BATLIBOI & CO. LLP, Bangalore

Student

Name: Advait Parey (2013B3A30462G)

Student Write-up

Short Summary of work done during PS-II: 1. First project was to develop a tool, management information system, that would streamline the process of keeping track of the progress on all client engagements across all locations in India.

2. Second project was to automate the JE-CAAT documentation process. This will help the firm save more than 2000 man hours every year.

3. Next was to automate the management information system dashboard refresh as and when the changes are made to the data source.

4. Apart from this we did Client work where our job was to assist the audit teams by analyzing the JE and TB data to test completeness of the data and to generate exception reports. We used various tools such as SQL, Audit Command Language, Monarch, Global Analytics Tool etc. for this analysis.

Tools used (Development tools - H/w, S/w): R Programming, SQL, VBA, Tableau, Audit Command Language, MS Excel, MS Access, Data Collector, Monarch, SAP

Objectives of the project: Business Development- Automation of redundant internal processes, Client Work

Outcomes of the project: Tools developed for business development enhance the team's efficiency by saving more than 3000 man hours every year. Using these tools implies minimal human intervention and hence improves the accuracy as well.

Major Learning Outcomes: As a part of the Data Analytics Team, working on various projects helped me gain technical knowledge of R, SQL, VBA etc. and tools like Tableau and ACL. Working with huge amount of data gave me hands-on experience and an insight into what issues one might face when dealing with data of this scale. Apart from the technical knowledge of various tools I used, imperative soft skills I learnt here is what I would rate highly. Working with one of the big-4 firms, I learnt how to conduct

myself in a professional manner, deal with people, manage crunch situations, manage time, manage quality of work and other cognitive skills.

Brief Description of working environment, expectations from the company: Being member firm of EY, working environment at S. R. Batliboi is not different from what one would've heard. The work atmosphere is very friendly and positive. Working with the team is a lot of fun along with tight work schedule.

Academic courses relevant to the project: Fundamentals of Finance and Accounting, Financial Management, Data mining.

PS-II Station: National Aerospace Laboratories, Bangalore

Faculty

Name: Akshaya Ganesan

Comments: Expectations from industry: S.R. BatliBoi is a company which focuses on Audit and analytics. The interns will be working on descriptive/diagnostic analytics in Advisory and Assurance Services line. Knowledge of analytics which includes statistics, databases, machine learning and programming (coding) skills is expected from the students. The company provides a good exposure to many of the latest technologies and tools.

Student

Name: Sadhana Srinivasan (2013B4A40654P)

Student Write-up

Short Summary of work done during PS-II: 1. To create a chatbot that can assist an auditor while performing analytical procedures during the audit. It has a natural language interface and supports dynamic and interactive graphs.

2. In fraud analysis the aim is to provide as a rich a subset for testing as possible so as to reduce the risk for the auditor when they give their opinion on a company by making the ease of finding fraud very high.

3. Image processing aims to track humans and inventory objects to document interactions and hence provide intelligence to the store owners or managers in terms of deployment of security personnel, stock etc.

Tools used (Development tools - H/w, S/w): Think pad laptop provided by organisation, python, NLTK, Flask, HTML/CSS, JavaScript, DC.js, D3.js, CrossFilter.js

Objectives of the project: 1. To create a chatbot that can assist an auditor while performing analytical procedures during the audit. It has a natural language interface and supports dynamic and interactive graphs. 2. In fraud analysis the aim is to provide as a rich a subset for testing as possible so as to reduce the risk for the auditor when they give their opinion on a company by making the ease of finding fraud very high. 3. Image processing aims to track humans and inventory objects to document interactions and hence provide intelligence to the store owners or managers in terms of deployment of security personnel, stock etc.

Outcomes of the project: The solutions will help improve the digital drive in EY and will help build stronger cases for client pursuits.

Major Learning Outcomes: 1) Learnt Flask, DC.js, NLTK, Python, Machine Learning concepts like One Class SVM and Isolation Forest

2) Created a bot with interactive UX and charts

3) In fraud multiple algorithms were tested and evaluated. Isolation Forest was evaluated as the best one

Brief Description of working environment, expectations from the company: Professional, Ideas are allowed to grow, access to resources, Expected to work in tight deadlines

Academic courses relevant to the project: Programming, oop, machine learning.

PS-II Station: Samsung R &D Institute - Image & Video Processing, Bangalore

Student

Name: Abdul Khalik Shaik (2013B3A70723H)

Student Write-up

Short Summary of work done during PS-II: Work is on android app development. Its a research project on device's AI.

Tools used (Development tools - H/w, S/w): Android Studio,Notepad++.

Objectives of the project: Create an AI on device.

Outcomes of the project: An AI that helps the user

Major Learning Outcomes: Android app development.

Brief Description of working environment, expectations from the company: Working environment is employee-friendly. Every floor has a pantry,where you can rest , chill and have coffee.

Academic courses relevant to the project: Object Oriented Programming, Machine Learning.

Name: Neel Renavikar (2014A7PS0089G)

Student Write-up

Short Summary of work done during PS-II: Compiler

Tools used (Development tools - H/w, S/w): Visual Studio

Objectives of the project: Source Code Translation from Microsoft UWP to Tizen.

Outcomes of the project: A POC level tool to translate basic applications

Major Learning Outcomes: Detail view of compiler functioning and application of advanced data structures.

Brief Description of working environment, expectations from the company: A healthy team environment, with helpful mentors and managers. However the company rules sometimes hinder the overall productivity.

Academic courses relevant to the project: Compiler Construction

Name: Mayank Anchlia (2014A7PS0053G)

Student Write-up

Short Summary of work done during PS-II: Source code translation from windows uwp to tizen

Tools used (Development tools - H/w, S/w): Visual Studio

Objectives of the project: Source code translation from windows uwp to tizen

Outcomes of the project: POC level tool that can translate UI elements as well as .CS files

Major Learning Outcomes: Compiler construction.

Brief Description of working environment, expectations from the company: COMPANY DO NOT TREAT ALL THREE CAMPUSES ALIKE, They offer less half of the ctc that is offered to BITS PILANI, PILANI Campus.

Academic courses relevant to the project: Compilers

Name: Rishabh Khurana (2013B4A70785G)

Student Write-up

Short Summary of work done during PS-II: Learnt about neural networks - both theoretical and application based. Created a model that could predict a sentence based on input hints.

Tools used (Development tools - H/w, S/w): Tensorflow, Python, Nvidia GTX 1080

Objectives of the project: Saving user time while accurately performing the intended action

Outcomes of the project: A basic "Proof Of Concept" model

Major Learning Outcomes: Everything from training a neural network to taking it into production.

Brief Description of working environment, expectations from the company: Good environment, flexible work hours. Very helpful and friendly mentor/managers. The company expects you to explore the basics of your projects, not just the implementation.

Academic courses relevant to the project: Machine Learning, Artificial Intelligence

Name: Sugam Garg (2014A7PS0092P)

Student Write-up

Short Summary of work done during PS-II: I worked on android mainly , using broadcast receivers to gather user activity, and wrote machine learning algorithms for it.

Tools used (Development tools - H/w, S/w): Android studio, jupyter

Objectives of the project: My project was on intelligent battery alerts. It was an Android based project in which I had to give charging alerts based on user activity.

Outcomes of the project: It solved the problem of user forgetting to charge phone by reminding the user to charge when at a chargeable location

Major Learning Outcomes: I learnt productionisation of machine learning algorithm in android.

Brief Description of working environment, expectations from the company: The work culture at Samsung is a bit stringent. Every employee mandatorily has to complete 45hrs a week during weekdays. The team atmosphere is good , mentors and managers are really supportive and help bridge the knowledge gap needed to implement the project.

Academic courses relevant to the project: Machine learning , data structures and algorithms

Name: Saumen Bhattacharjee (2013B3AA0678H)

Student Write-up

Short Summary of work done during PS-II: The quality of work here in Samsung depends a lot on the team that you are allotted to. For the most part, you have no say in what team you are allotted, so I'd say it all depends on luck. While some people have actually had the opportunity to work in fields related to cutting edge futuristic technology, I was stuck with working on how to adapt an automation software called Autobot. Neither was the work interesting, nor did I learn anything exceptionally good. As for the culture, it is quite fun to be in Samsung. If you are really interested in IT field, Samsung is a good place to be at.

Tools used (Development tools - H/w, S/w): Robot Framework

Objectives of the project: To adapt a Robot Framework based tool in order to automate small cell testing

Outcomes of the project: Successfully installed the framework

Major Learning Outcomes: Python, Robot Framework

Brief Description of working environment, expectations from the company: Working environment is very good and fun.



PS-II Station: Samsung R &D Institute - Software Systems, Bangalore

Student

Name: Divyansh Gupta (2014A7PS0136P)

Student Write-up

Short Summary of work done during PS-II: The objective was to identify if the system is running in a single threaded mode and take an appropriate scheduling decision to get performance benefit without much or zero power penalty

Tools used (Development tools - H/w, S/w): Jupyter Notebook, Jig box, Trace-cmd

Objectives of the project: To enhance user experience via improved scheduling of Single Thread use cases

Outcomes of the project: 5 percent improvement in System performance

Major Learning Outcomes: Kernel Programming

Brief Description of working environment, expectations from the company: The work environment is quite good and flexible thus encouraging learning and innovation

Academic courses relevant to the project: Operating Systems, Machine Learning

Name: Shashwat (2014A3PS0307P)

Student Write-up

Short Summary of work done during PS-II: Developed and implemented a robust mechanism to detect any soft lock up in the system and catch the responsible thread and take necessary action to recover from it.

Tools used (Development tools - H/w, S/w): Linux

Objectives of the project: To enhance the stability and reliability of Tizen RTOS.

Outcomes of the project: TizenRTOS was successfully auto-detecting any soft lockups in the system

Major Learning Outcomes: RTOS, Linux, Github, Kconfigs

Brief Description of working environment, expectations from the company: The company needs you to work for 45 hours a week, failing which results in deduction in stipend. Mentors and Managers are allotted who are very helpful and are very supportive throughout the project. Other team mates also help you understand the project and what exactly manager is expecting from us. Overall a very good experience.

Academic courses relevant to the project: OS, Microprocessors, C programming, DSA

Name: Raghav Maheshwari (2013B4A80772P)

Student Write-up

Short Summary of work done during PS-II: Worked on developing a Neural Network based Text Prediction Model used in mobile devices for Hindi language. My project included training the model, testing the performance and integrating it on device.

Tools used (Development tools - H/w, S/w): Python, Tensorflow, C++, Java

Objectives of the project: To develop a language model for hindi language with performance comparable to the english counterpart.

Outcomes of the project: The major portions of the project was completed. the performance was improved but we were not able to reach the performance figures for English. This is mainly due to structural and morphological differences in Hindi and English.

Major Learning Outcomes: I learned the whole process of language modeling and how neural networks are the major focus in the field of machine learning.

Brief Description of working environment, expectations from the company: The work environment and culture at Samsung is excellent. People are quite friendly. There are so many facilities that are provided to the interns compared to other PS stations. Overall it was a amazing experience.

Academic courses relevant to the project: Machine Learning.

Name: Karan Gill (2013B4A80759P)

Student Write-up

Short Summary of work done during PS-II: Develop machine learning algo for ondevice-ai,prediction of app,self driving bot

Tools used (Development tools - H/w, S/w): Python,Android Studio,Eclipse,Spyder,Pycharm

Objectives of the project: Reinforcement learning

Outcomes of the project: App prediction model

Major Learning Outcomes: ML,Android,Python

Brief Description of working environment, expectations from the company: Working environment is good but a little strict for timings as it has 9 hours policy for daily but a lot to learn as it is r and d center with great projects.

Academic courses relevant to the project: Machine learning,OS

Name: Shambhavi Verma (2013B4A30762P)

Student Write-up

Short Summary of work done during PS-II: Detection and Inpainting of eye using Machine Learning Approaches

Tools used (Development tools - H/w, S/w): Python

Objectives of the project: Applying machine learning methods over image processing ones in the existing systems.

Outcomes of the project: Learnt about Convolutional Neural Networks for Eye Detection

Major Learning Outcomes: Knowledge about Convolutional Neural Networks

Brief Description of working environment, expectations from the company: The company expects the student to give their 100 % which helps the student in learning the concepts and their application in depth

Academic courses relevant to the project: Machine Learning , Non Linear Optimization

Name: Prudhvi Tej Jayanthi (2014A7PS0111G)

Student Write-up

Short Summary of work done during PS-II: Language Modelling done using Machine Learning more specifically using RNNs and LSTM Networks

Tools used (Development tools - H/w, S/w): Python

Objectives of the project: Natural Language Processing and Text prediction

Outcomes of the project: Text Generation and Prediction of the next word given that a user types in a certain paragraph(a context).

Major Learning Outcomes: To use machine learning models for learning (or training) the data that user types in and using this data to recognize the context.

Brief Description of working environment, expectations from the company: The work environment is excellent. There would be a learning curve and after that you are expected to meet certain deadlines. Samsung also has flexible timings and our colleagues are also friendly and will guide in every step.

Academic courses relevant to the project: Machine Learning, Neural Networks, Information Retrieval.

Name: Debopriya Shukla (2014A7PS0011P)

Student Write-up

Short Summary of work done during PS-II: Software development

Tools used (Development tools - H/w, S/w): ML, Android studio

Objectives of the project: Use phone storage more efficiently

Outcomes of the project: Detected junk files present in the phone

Major Learning Outcomes: Learnt ML

Brief Description of working environment, expectations from the company: Great project and very nice working environment

Academic courses relevant to the project: ML, DSA

Name: Harish Reddy (2014A7PS0126P)

Student Write-up

Short Summary of work done during PS-II: Acceleration of programs based on deep learning using parallel processing on GPU. Used Open CL to program GPU.

Tools used (Development tools - H/w, S/w): C++

Objectives of the project: Acceleration of programs based on deep learning using parallel processing on GPU.

Outcomes of the project: Measurable increase in performance and identification of further optimisations required.

Major Learning Outcomes: GPU programming

Brief Description of working environment, expectations from the company: Very well working environment. Pleasant colleagues who supported me in any doubt I had regarding the project.

Academic courses relevant to the project: Machine Learning.

PS-II Station: Searce, Pune

Student

Name: Saurabh Sikchi (2014A7PS0070G)

Student Write-up

Short Summary of work done during PS-II: Google Cloud Platform - solve client queries

Tools used (Development tools - H/w, S/w): SSH, Compute Engine, Putty, ping, telnet

Objectives of the project: To solve client queries

Outcomes of the project: Solved client queries

Major Learning Outcomes: DevOps in GCP, Professional Communication

Brief Description of working environment, expectations from the company: PC was provided. Company expected that client queries be solved.



PS-II Station: Siftory, Bangalore

Student

Name: Kuncha Krishna Sai (2014A3PS0292P)

Student Write-up

Short Summary of work done during PS-II: BackEnd Developemnt, Product development

Tools used (Development tools - H/w, S/w): Ruby, Sql, AWS services

Objectives of the project: To design a new product for the organization

Outcomes of the project: Schema to hold the data of the organization, new products base work

Major Learning Outcomes: Ruby, SQL, Working with a group in developing code

Brief Description of working environment, expectations from the company: The Work Culture is the best, the employees are very encouraging and helpful, and help you throughout the course of internship. Doubts are actively encouraged and you are treated on par with an employee and are given responsibilities as such too.

Academic courses relevant to the project: OOP, DBMS

Name: Satyariya Singh (2013B1A30356P)

Student Write-up

Short Summary of work done during PS-II: During my internship at Siftory I was assigned three major projects. The objective behind this project is to generate a real time mapper on sitestacks that can in a few minutes crawl a particular url for the stack technology being used and generate a response for the user. The mapper will be coded on a separate server which will act as an external api for sitestacks. The mapper has to be extensive and detailed in its response while maintaining a low latency. By introducing this feature and a products page which will cater to the need for product wise data for users, we hope to make sitestacks a very promising Siftory product. Another project was focused on increasing the quality of Siftory data and their Graph Universe. The retry logic was a sort of a look back mechanism where the data from previous crawls were compared and any incoherent data found was recrawl to avoid any false

positives. The third and the last project dealt with reducing the crawl time of the Company. The complete web crawling took about a week to complete and the project objective was to reduce this time.

Tools used (Development tools - H/w, S/w): Rails 5, PostgreSQL, Mongo DB

Objectives of the project: Working on the web crawl architecture of the company, thereby making it efficient and fast.

Outcomes of the project: As a result of the work done, the crawl time was reduced significantly and the Graph quality was enhanced.

Major Learning Outcomes: After the completion of my internship at Siftery, I can say without doubt that I have gone on to become a better programming, a team player and most importantly a better professional.

Brief Description of working environment, expectations from the company: PS II was great learning process for me. Working at Siftery was a great experience as we shared a lot responsibility and sense of ownership in the area we started working. In the past few months I have pushed thousands of lines of code into production and it feels amazing to see, the features I worked on being used by so many people around the world. At Siftery, they treat you like full time employees and give you a lot of responsibility from day 1. It's pretty challenging and at same time fun too. The start up is one of the fastest growing companies in India and I would recommend tech enthusiasts to definitely consider it as an internship option.

Academic courses relevant to the project: OOP, DBMS, CP

*PS-II Station: Symantec Software Solutions Pvt. Ltd - Data Analytics,
Pune*

Student

Name: Lalit Kiran Naidu (2014A7PS0044P)

Student Write-up

Short Summary of work done during PS-II: To create a Google Chrome extension that detects when a user has visited a phishing website and alert the user regarding the same in real time. This is done using Perceptual Image Hashing and a domain-hash dictionary.

Tools used (Development tools - H/w, S/w): Perceptual Image Hashing, Javascript, Google Chrome extension development library, Python scripting, Selenium, PHP

Objectives of the project: To create a marketable Chrome Extension which can be sold along with Norton security

Outcomes of the project: A prototype Chrome extension which performs all requisite functions and can be marketable after slight modifications.

Major Learning Outcomes: Product design from inception to market-worthy completion, web design, scripting, statistical analysis

Brief Description of working environment, expectations from the company: The company has a lenient approach towards work and is not stringent about in-times. However, the projects are not well planned and might end up on a dead-end. Employees are extremely supportive and mentors are knowledgeable.

Academic courses relevant to the project: Data Structures and Algorithms

Name: Pankaj Tiple (2013B4A70381G)

Student Write-up

Short Summary of work done during PS-II: I worked on the Django and flask API for building a monitoring portal for all the automations. The Portal checks running status and intended task of

completion status and displays it on the web interface. Also Remote Procedure Call was used to start scripts remotely.

Tools used (Development tools - H/w, S/w): Django, Flask, HTML, Bootstrap, Morris Charts

Objectives of the project: To monitor all the automations and remotely control them

Outcomes of the project: Completed intended objective successfully.

Major Learning Outcomes: Command in Python language, Bootstrap and JavaScript

Brief Description of working environment, expectations from the company: The work atmosphere in Symantec is very friendly. All that matter for them is outcome, within the given deadline, irrespective of the hour involve.

Academic courses relevant to the project: DSA, Database Management

*PS-II Station: Symantec Software Solutions Pvt. Ltd. - App Development,
Bangalore*

Faculty

Name: Vineet Garg

Comments: Expectations from industry: Students in Bangalore were primarily involved in Big Data migration and automation testing. Knowledge of Big Data, Network Security, C/C++/Java, Apache Hadoop framework was used.

Student

Name: Vineel Kumar Vusa (2014A7PS0112P)

Student Write-up

Short Summary of work done during PS-II: Successfully build a mobile and web application which showcases the strong authentication using VIP Services and CDK (Credential Development Kit). Successfully implemented push notifications from APNS.

Tools used (Development tools - H/w, S/w): Node.js, Express Framework, Xcode, Swift.

Objectives of the project: Depict strong authentication via two factor authentication using VIP Services.

Outcomes of the project: Successfully completed the web and mobile applications and are now deployed in the AWS and AppStore.

Major Learning Outcomes: Learnt about strong authentication, APNS, web application and mobile application development.

Brief Description of working environment, expectations from the company: Working environment in the company is really good. We can expect some productive work where we can learn many concepts and gain experience from the team members you are working with.



PS-II Station: Symantec Software Solutions Pvt. Ltd. - App Development, Bangalore

Student

Name: Shubham Chaturvedi (2013B3A70530G)

Student Write-up

Short Summary of work done during PS-II: 1. Migrating Norton Mobile Security app to Android O.

2. Anomaly detection in telemetry data using ML techniques.

Tools used (Development tools - H/w, S/w): Android Studio, R studio

Objectives of the project: 1. To make NMS app compatible with Android O. 2. Make predictive model.

Outcomes of the project: NMS app was made compatible with Android O and a predictive model was made for anomaly detection.

Major Learning Outcomes: Learnt Android app development and ML on real world big data

Brief Description of working environment, expectations from the company: Employees are busy so mentorship is less. Students have to learn on their own. Nature of work depends upon the team allotted.

Academic courses relevant to the project: Object Oriented Programming, DBMS, Machine Learning

PS-II Station: TapChief, Bangalore

Student

Name: Raghu Ram (2014AAPS0245H)

Student Write-up

Short Summary of work done during PS-II: 1) Made a user interface for image stitching and fusion. 2) Motion detection for an IP cam. 3) Pedestrian/Vehicle detection and Tracking for driver vision assistance.

Tools used (Development tools - H/w, S/w): OpenCV, C++, Python

Objectives of the project: All projects needed efficient real time performance.

Outcomes of the project: Experimented various methods for each project to finally fix an optimal algorithm.

Major Learning Outcomes: Learnt new computer vision approaches.

Brief Description of working environment, expectations from the company: Great work culture. Company expects good coding skills with experience in Image processing or computer vision

Academic courses relevant to the project: Digital Image Processing

PS-II Station: UST Global, Infiniy Labs, Trivandrum

Student

Name: Desai Nikhil (2013A7PS0099G)

Student Write-up

Short Summary of work done during PS-II: Worked in two areas, machine learning and blockchain. Developed a chat bot as a part of the machine learning project and a blockchain based electronic health record management system.

Tools used (Development tools - H/w, S/w): Microsoft LUIS, Ethereum, Solidity, Nodejs

Objectives of the project: Developing an electronic health record management system which offers privacy, security and integrity to the records/data involved in the system by leveraging blockchain capabilities

Outcomes of the project: Developed a minimum viable product(MVP) which stands as a proof of concept that such a blockchain based electronic health record management system is a better option.

Major Learning Outcomes: Learned about new technologies like blockchain along with a couple of languages and frameworks including LUIS for NLP and conversational AI.

Brief Description of working environment, expectations from the company: The ecosystem was very friendly and offers a lot of freedom in choosing the projects and the way we approach the same.

Academic courses relevant to the project: Neural Networks and Fuzzy Logic

Name: B.H.Bhargav (2014A3PS0159P)

Student Write-up

Short Summary of work done during PS-II: I worked on 3 projects during the internship. The first one, Digital Assistant is about developing a chatbot that can converse with clients of the company. Initially our team has developed it using Microsoft services and later we worked on a neural network model that could help chatbot in giving appropriate responses. The second one, Script Analyzer is a java based web

application that helps to analyse and visualize SQL queries in shell script files. The last one, is EHR Blockchain which deals with implementing blockchain to healthcare sector.

Tools used (Development tools - H/w, S/w): Microsoft Bot Framework, Microsoft Cognitive Services, Python, Word2Vec || Eclipse, Java, Webgraphviz || Ethereum, Web3JS

Objectives of the project: Script Analyzer - To develop a java based web application that helps to analyse and visualize SQL queries in shell script files.

Outcomes of the project: Script Analyzer - A stable version of the project has been developed..

Major Learning Outcomes: Machine Learning, NLP, Python || Java Web Application Development || Blockchain, Ethereum

Brief Description of working environment, expectations from the company: Infinity Labs is the innovation division of UST Global. Mostly Interns would be working in the lab. Majority of the projects deal with emerging technology trends like ML, NLP, Blockchain, AR/VR, IOT etc. The interns should be familiar with these topics, because there's no technical training as such. You will also get to participate in a lot of events organized by the company. As of now, the available facilities compared to the number of interns is less. Also, there is an opportunity for PPOs too.

Academic courses relevant to the project: Machine Learning, OOP, DBMS etc.

Name: Shubham Saraswat (2014A8PS0430G)

Student Write-up

Short Summary of work done during PS-II: Was wrking on computer vision part for self driving car

Tools used (Development tools - H/w, S/w): Yolo, open cv, darknet, Anaconda

Objectives of the project: designing the accurate model for self driving car

Outcomes of the project: made a model who can detact all traffic signal

Major Learning Outcomes: learned a lot about different technologies

Brief Description of working environment, expectations from the company: Working environment is good and we are allowed to choose how we want to approach in the project complete freedom is given and rest all are good.

Academic courses relevant to the project: Java, python, Machine Learning.

Name: Ritesh Mohan Monga (2014A3PS0256G)

Student Write-up

Short Summary of work done during PS-II: 1. Robotic Process Automation project

2. Autobots project

3. Research project on digitization of mining industry

4. Application development using c# and .NET

Tools used (Development tools - H/w, S/w): Uiopath studio, Django, python, c#, Java, .NET

Objectives of the project: Automation of timesheet filling process for RPA Project, building forms using Django, research work on digitization of mining industry, application development for automation of timesheet filling

Outcomes of the project: Application development using c# is in progress, rest projects are finished

Major Learning Outcomes: Learned new programming languages and worked directly for clients, gaining exposure with the workings of the industry

Brief Description of working environment, expectations from the company: It's good enough.

Academic courses relevant to the project: I didn't do any course in BITS which was relevant to the projects I did here.

Name: Amitsinh Kokate (2012A8PS0350P)

Student Write-up

Short Summary of work done during PS-II: Developed an android application for Kerala police

Tools used (Development tools - H/w, S/w): Android studio

Objectives of the project: Create an android app

Outcomes of the project: Android App

Major Learning Outcomes: Learned Android Studio

Brief Description of working environment, expectations from the company: Company does not expect anything more than basic, work environment is flexible.

Academic courses relevant to the project: Computer Programming.

Name: Bharat Kumar Gandhi (2014A2PS0682P)

Student Write-up

Short Summary of work done during PS-II: Reviewed use cases and research papers on automated algorithmic trading. Learnt various stages of software development .Gained knowledge about Artificial neural networks (ANNs) and NLP(Natural Language Processing) to understand the software design completely. Conducted extensive research on exchange policies, rules and regulations of CME-NYMEX exchange. Learnt , practiced and analysed online simulated and real trading for WTI crude oil futures. Analysed existing trading softwares in the market. Gained knowledge about how a database is designed. Researched and analysed various Quantitative and Qualitative parameters like OHLC (Open,High,Low,Close),demand, supply, production , Geopolitical factors etc. affecting crude oil prices. Conducted extensive research on major crude oil futures historical and real time Data vendors like CQG , Dxfeed, Kinetick ,Tradingview etc. and their policies . Carried out data purchase process and availed discount of 20%. Analysed various blogsites ,news websites likes Oilprice.com , Bloomberg etc. for the qualitative data.

Tools used (Development tools - H/w, S/w): My contribution was finance and trading domain expertise.

Objectives of the project: Software will be fully automated, algorithmic, unsupervised and will take into account both quantitative and qualitative data for the Crude oil futures and take the trading decision on its own. It will be able to provide non-negative return on investment with 100% assurity .Software design will require the use of predictive modelling, Natural Language Processing (NLP) , Artificial Neural Networks(ANNs). ANNs will be trained and back-tested with Historical trade data .For NLP part, Natural language classifiers are available in the market.Data formats and data interval will be critical in designing the effective software.A team of around 30 people is assigned for different tasks of the project.

Outcomes of the project: Automated trading software for Crude Oil futures derivative with Non-negative return with almost 100% assurity.

Major Learning Outcomes: Learnt Simulated and Real trading on NYMEX exchange.Gained knowledge about Natural Language Processing(NLP) , Artificial Neural Networks(ANNs) and Database design. Understood policies of exchange and trading data vendors.

Learnt about various Software development stages .

Brief Description of working environment, expectations from the company: Everyone is supportive,encouraging.We easily got the permission for late night work in the office.In UST Global ,one can learn a lot of technologies in 6 months. Learning resources like Pluralsight, coursera are provided.

Academic courses relevant to the project: Economic --Principles of Economics(POE) ,Micro-Macro economics, Finance --Derivatives&Risk Management (DRM) , Security Analysis&Portfolio management(SAPM) , Financial engineering, Fundamentals of Finance (FUNDAFIN), Computer Science -- AI , Machine Learning, DSA .

PS-II Station: VMware Software India Pvt. Ltd., Bangalore

Student

Name: G.S.V.N. ANOOP (2014A7PS0134P)

Student Write-up

Short Summary of work done during PS-II: Added new features that help in seamless use of Citrix XenApp and XenDesktop products on VMware Identity Manager.

Tools used (Development tools - H/w, S/w): Java, C#, JavaScript, JIRA, Confluence, Jenkins, Git, Reviewboard

Objectives of the project: To integrate Citrix Remote Desktop Services - XenApp and XenDesktop with VMware Identity Manager

Outcomes of the project: Added new features that help in seamless use of Citrix XenApp and XenDesktop products on VMware Identity Manager.

Major Learning Outcomes: Cloud Computing, Software Development Methodologies, Parallel Computing

Brief Description of working environment, expectations from the company: The industrial experience in VMware has enhanced my coding skills up to a great extent. It has improved my actual application of coding in the real world, which has developed a strong understanding of the field. Also, there is a difference in coding for a normal academic question and for a company. For example, in a general academic question, one can simply name a variable as i, j, k, a, b, etc but while coding for a company, every bit matters. It is required to give proper names to all the variables, so that when a peer who looks through it can understand the code seamlessly. It is also quite imperative to have proper indentation, proper spacing etc. Also, to account for the future needs, the designed code should be as simple as it can be. I have learnt how to write RESTful APIs and also to debug any given code. Apart from Java, two other languages (Angular JS, and C#) were also used in my project, which helped me to develop insights of the same. This PS experience will augment my future career prospects as it gave me such an excellent Industrial exposure. Hence, I am very grateful that I got this opportunity to work with people of such high quality at VMware.

Academic courses relevant to the project: Object Oriented Programming, Parallel Computing, Cloud Computing, Data Structures and Algorithms

Name: Komal Sai (2014A7PS0118P)

Student Write-up

Short Summary of work done during PS-II: Worked on Design and Prototype of Remote Memory / Network RAM for vSphere (vCener and ESX hosts). Designed and implemented centralized memory manager and ESX infrastructure required to utilize remote memory service.

Tools used (Development tools - H/w, S/w): C (vmkernel programming) , C++

Objectives of the project: To implement a centralized memory manager that provides remote memory service for a cluster and ESX infrastructure to utilize this service.

Outcomes of the project: Successfully designed and implemented centralized memory manager and ESX infrastructure from our side. Palo Alto team was working on a module which is later going to be integrated with our EX infrastructure for a complete working model.

Major Learning Outcomes: Memory management , Object oriented programming, vmkernel programming, network programming

Brief Description of working environment, expectations from the company: Work load was medium to hard. The transition to ESX and vmkernel side coding was challenging. Deadlines are reasonable.

Academic courses relevant to the project: Operating Systems, Computer Networks, Object Oriented Programming

Name: Manochandra Menni (2014A7PS0117P)

Student Write-up

Short Summary of work done during PS-II: I was involved in the End User Computing of VMware Inc, where the desktop is offered as a service(DaaS) to customers delivered through public clouds. My contribution was specifically involved towards automation of decommissioning customers which would later go on and integrated with the self service tool that the customer uses whenever he wants to move away from this offering by click of single button

Tools used (Development tools - H/w, S/w): Ansible, Python, Powershell

Objectives of the project: Automation of tenant teardown and CMS enablement

Outcomes of the project: Implemented Automation scripts for the required

Major Learning Outcomes: Computer Networking , Ansible, Cloud computing

Brief Description of working environment, expectations from the company: VMware is such a fun place to work. There is so much importance given to work life balance and also on personal learning. The emphasis on core company values is paramount and it makes you feel to do more for the organization.

Academic courses relevant to the project: Computer Networking

PS-II Station: Walmart Global Technology Services, Bangalore

Student

Name: HARSHITA RAJPUROHIT (2013B4A80764P)

Student Write-up

Short Summary of work done during PS-II: My project was to understand the Sanitization Service of information Security of Walmart and adding some plugins to the Service and later on integrating the Service with the Application Foundation of Walmart i.e. Strati which is an in-process library so that anyone within the Walmart can call the service.

Tools used (Development tools - H/w, S/w): Spring Tool Suite , Eclipse

Objectives of the project: Integration of Sanitization Service on Application Foundation of Walmart

Outcomes of the project: Integrated the sanitization service on a common platform such that anyone within the Walmart can call the service.

Major Learning Outcomes: Learnt how to work in a cooperate environment and understood about Information Security and learnt JAVA , Spring and how web applications work

Brief Description of working environment, expectations from the company: Working Environment was nice. The people here are always enthusiastic and ready to help. Flexibility in Working hours as well.

Name: Sribalaji M (2014A3PS0241G)

Student Write-up

Short Summary of work done during PS-II: My project was related to UI development using Angular 4. I was not very fluent in frontend development, so I was given sufficient time to get upto speed with the team. In the mean time I familiarized myself with the project the team is working on, the business logic and the current status of project. I learnt Angular from the official docs during the first two weeks. I was later included as a part of the development and I realized there is lot more to Software development than to just write a few lines of code. I was intimated with the importance of writing clean code like

using descriptive variable names, writing small functions, etc. I also had the opportunity to learn about collaboration and version control using git, which greatly simplified the development process.

Tools used (Development tools - H/w, S/w): I extensively used git for collaboration of the project with my team. SourceTree was used for git UI. Angular cli was used for development on angular 4.

Objectives of the project: UI Development using Angular 4

Outcomes of the project: I understood how the development cycle works at the corporate level.

Major Learning Outcomes: I understood how the development cycle works at the corporate level.

Brief Description of working environment, expectations from the company: The work culture was fantastic. The employees were friendly and more than eager to help. We used to have planning at the beginning of every two weeks where we would discuss on what tasks we would be doing over the next two weeks. There were daily standup meetings, where every person in the team would give their updates for the previous day and what they plan to do on the current day. This helped us to closely stick to our targets and also know the status of the other team members. The working hours were flexible.

Academic courses relevant to the project: Software Engineering

Name: Abhijeet Pandey (2014A8PS0440G)

Student Write-up

Short Summary of work done during PS-II: Project1:

Needed to fix the bugs in order services(application to provide order details to the store managers) API and increase its performance by writing test cases using JUnit.

Project2:

Formation of inmemory database using Apache Ignite, so that sql queries can be executed and fetch or update the data in a more faster way than reading data from the hard disk.

Tools used (Development tools - H/w, S/w): Java, Spring, JUnit,Apache ignite,SQL

Objectives of the project: To improve the performance of Order Service

Outcomes of the project: Performance improved from 50% to 85%

Major Learning Outcomes: Learned different technology like Java, Spring, JUnit, Apache ignite

Brief Description of working environment, expectations from the company: Working environment is very good. I have learned too many new things after working on different projects. My team is really supportive and Learned many things while working with them.

Academic courses relevant to the project: OOP(Object Oriented Programming), DBMS

Name: Shivani Mittal (2014A8PS0402P)

Student Write-up

Short Summary of work done during PS-II: The project aims to develop scripts for crawling suppliers data from web which has to be integrated with the Suppliers Portal. The language need is mostly Python3 with a touch of JSON and HTML. The final goal of this project is to build a next-gen platform with some of the latest technologies to bring in sourcing efficiency and help accelerate Buyer Connect roadmap.

Tools used (Development tools - H/w, S/w): Scrapy Framework, Python 3, HTML, XPath

Objectives of the project: The project aims to develop scripts for crawling suppliers data from web which has to be integrated with the Suppliers Portal.

Outcomes of the project: Helps gathering data of suppliers of all over the world

Major Learning Outcomes: Learned web scraping

Brief Description of working environment, expectations from the company: Work environment is very good. Sometimes there are very tight deadlines. But still you are able to cope up with that. Flexible working hours.

Name: Akshit Anand (2013B3A80536G)

Student Write-up

Short Summary of work done during PS-II: My project @WalmartLabs is to develop Virtual Reality commerce for Walmart. Team is divided in two parts i.e. Frontend Development and Backend Development which works in co ordination with each other. The Frontend team works in processing 3d models, render them in Virtual Reality and create a Virtual Reality store. The Backend team focuses on creating a shopping model for customers and implement functionalities like create a cart, add items to create, checkout and place an order. Both the teams in collaboration aims to create a full-fledged VR application to create a new shopping experience.

Tools used (Development tools - H/w, S/w): Unity, C#, Java, JavaScript, Python, WebGLStudio, MySQL, Cassandra, DBeaver, Git.

Objectives of the project: To create a V-Commerce platform for Walmart.

Outcomes of the project: We were successful in creating a Walmart exhibition store in Virtual Reality. Although the project has a long way to go before coming into production, it was a great learning experience working for it.

Major Learning Outcomes: Walmart is a great place to explore work domains and learn a lot if you are in right team. The most important thing Walmart provides is an open culture and flexibility in working hours. An intern is equally important is an employee while making decisions or doing work for a project. Quarterly team outings and team lunches creates strong bonding among team members. Also, Walmart is willing to go to any extent to provide resources and help developers to explore new technologies and come up with innovative solutions.

Brief Description of working environment, expectations from the company: Walmart is a great place to explore work domains and learn a lot if you are in right team. The most important thing Walmart provides is an open culture and flexibility in working hours. An intern is equally important is an employee while making decisions or doing work for a project. Quarterly team outings and team lunches creates strong bonding among team members. Also, Walmart is willing to go to any extent to provide resources and help developers to explore new technologies and come up with innovative solutions.

Academic courses relevant to the project: Computer Programming, Data Structures and Algorithms, Object Oriented Programming.

Name: Ashvjit Singh (2013B2A30797P)

Student Write-up

Short Summary of work done during PS-II: There were 3 parts in the Smart Forecasting Project that I worked on:

* Regression: Developed the framework, UI and corresponding micro-services. Based on TestNG, a common unit testing framework, similar to Junit, but better in our use case, with the following features:

1. Allows Developers to group tests by domain, service & ability to execute the domain/service tests independently.
2. Ability to define priority (Not the same as in TestNG), that categorizes the tests as P1/P2/P3, enabling decisions when a component is ready to deploy or would need additional approvals.
3. Custom reports generated, that would cater to the needs of different audience (Executives/Managers/Developers) which are, of course, much better than the default TestNG report.

* ETL: I was give one ad-hoc task for data pulling, transformation and loading. Secondly, I modified the existing ETL pipelines for better code hygiene, code coverage and removing existing potential bugs.

* POC on database selection for search: I was given a task to pick a database which can perform well in writes, pointed queries, aggregations and can be used for text search. The candidates were MongoDB, Cassandra, ElasticSearch and Solr. I tested for the relative writes per second, response time for pointed queries and simple aggregations. ElasticSearch came out on top and has a huge adoption rate nowadays. I developed related micro-service and corresponding mapping/indexing for accurate free text search.

Tools used (Development tools - H/w, S/w): Looper (based on Jenkins), Hygieia (publishing code results), Sonar (for generating code hygiene reports), OneOps (cloud based VMs for deploying artifacts), IntelliJ Idea, Atom and Eclipse for development, GitHub as VCS, OpenStack Swift for Object Store, Docker for Containers and CCM for Central Configuration Management.

Objectives of the project: The goal of smart forecasting project was to better forecast the sales of fast-moving/perishable items to avoid over/under stocking, reduce wastage and hence, increase revenue generation for Walmart US stores.

Outcomes of the project: Developed micro-services and regression tools for the Smart Forecasting project. Learned better and cleaner coding in Java, React JS and Scala. Learned how search engines work and how to modify them for our own use. Developed a sense of punctuality and responsibility. Learned about the understanding of actual scope of a production-based task.

Major Learning Outcomes: Learned about open source search Engines based on Lucene, mainly ElasticSearch and Solr. Understood the importance and implemented Design principles. Mechanisms of Regression (End to end functional) testing.

Brief Description of working environment, expectations from the company: Walmart GTS as a whole is a great workplace where work-life balance is a priority for the leadership. Since, it is a Fortune One Company, they have enough resources to put projects in motion. Also, a wide variety of projects from Machine Learning to Virtual Reality to normal Software Development are available. My personal experience included a steep and friendly learning curve. Mentors are readily available and helpful at ever stage. You will be treated as one of the associates and would be given work accordingly which encourages hard work and helps interns grow. The tasks given, generally, are from various domains, thus, helping in broadening of horizons, and giving a 'full stack' knowledge about the project. Also the pre-Placement hiring process was changed from technical interviews and coding-round based to manager feedback, thus, making sure interns work and learn here and be rewarded accordingly.

Academic courses relevant to the project: OOP, OS, DBMS, Software Engineering Principles, ML

Name: Yash Mahajan (2013B2A30412P)

Student Write-up

Short Summary of work done during PS-II: I was involved in development of an automated pipeline to validate product identifiers of items in walmart catalog.

Tools used (Development tools - H/w, S/w): Apache Spark, Apache Hive, Apache Hadoop, MySQL.

Objectives of the project: To validate product identifiers.

Outcomes of the project: Automated pipeline was developed to achieve 50% coverage of validated items in walmart catalog.

Major Learning Outcomes: Learnt HDFS, Learnt Spark programming.

Brief Description of working environment, expectations from the company: Working environment was very positive. Team was very supportive.

Name: Bandaru Venkata Satish (2014A7PS0125H)

Student Write-up

Short Summary of work done during PS-II: Understood the domain of Performance engineering and worked with its industry standard tools like HP Loadrunner. Got an opportunity to learn the performance aspects of the web applications that we develop.

Tools used (Development tools - H/w, S/w): HP Loadrunner, Apache Tomcat, Apache Maven, Visual Studio, OneOps.

Objectives of the project: Payload Automation for load testing using DLL

Outcomes of the project: Successfully used DLL in loadrunner that automates the entire process of generating the payload.

Major Learning Outcomes: Performance Testing and behavior of web applications in extreme stress cases.

Brief Description of working environment, expectations from the company: Here at Walmart, Employees believe in collaborative learning. They expect the interns to explore new areas and do POC works.

Academic courses relevant to the project: Software Engineering

Name: Divyank Jain (2014A8PS0342G)

Student Write-up

Short Summary of work done during PS-II: Work done was on subjects related to Cloud Computing, Distributed Systems, Database Management and Software Development. Several different technologies like Maven, SonarQube, Jenkins, etc were used to build, develop and test the softwares being written or improved. Work related to software development included writing code using Eclipse, compiling and building on local machine using maven and deploying on server using Jenkins. Work related to database was to run some queries to add, update or delete data. Work related to Cloud Computing was related to first understand how cloud computing works and then to get familiar using a proprietary cloud platform developed and used by WalmartLabs, I had to create assemblies and then manage them on the platform. Overall I got to work with many new technologies.

Tools used (Development tools - H/w, S/w): BitBucket, Jenkins, Maven, Eclipse, Confluence, SonarQube

Objectives of the project: To develop and to test software using different technologies

Outcomes of the project: Several different softwares were developed and tested with the help of Eclipse, Maven, JUnit, TestNG, Jenkins and SonarQube

Major Learning Outcomes: Learnt several new technologies including Maven, Jenkins and SonarQube

Brief Description of working environment, expectations from the company: Many new technologies and platforms are used, and they don't shy away from newer technologies or ideas. You have to find the best solution to the problem with the least cost involved, so you have to look into several different approaches to get to the final one. Agile is followed so stand ups, sprints are used as methods for planning and discussions.

Java is used as the programming language to code. Spring Framework is also used.

Work culture is very good. There are frequent outings. Lunch is free. Transport is provided by the company.

Academic courses relevant to the project: Distributed Systems, Cloud Computing, Software Development Lifecycle, Database Management.

Name: Akshay Gattani (2014A3PS0190P)

Student Write-up

Short Summary of work done during PS-II: My work was to add API™s to the current DCC code and increase its functionality and make the code robust. Spring framework was used to inject the data dependency. Mockito was used to mock interfaces so that a dummy functionality could be added to a mock interface that could be used in unit testing. Junit was used to test the functionality of the added APIs independently. One task was convert an excel file to a JSON payload. A python script for the same had to be written. I had to plot the graphs for different error codes. Medusa was used for this purpose.

Tools used (Development tools - H/w, S/w): IntelliJ, SQL Developer, Postman

Objectives of the project: Adding and testing API's to the existing DCC code to extend and add more functionalities and make the code robust.

Outcomes of the project: API's were successfully added and tested with real time data.

Major Learning Outcomes: Boxing Algorithms, Database Management, Unit Testing, Design Patterns

Brief Description of working environment, expectations from the company: Friendly work environment and flexible work timings. Good place to work as an intern.

Academic courses relevant to the project: Database Management Systems, Object Oriented Programming, Data Structures and Algorithms

Name: Anubhav Gupta (2013B3A30672P)

Student Write-up

Short Summary of work done during PS-II: I worked on the project my team was working on. It involved working in Java 8, Apache Cassandra, Apache Kafka among other technologies. I created web APIs and worked on the design for one of the components of the project. I was given tasks to integrate tools to make the project as required, like swagger. Later on , I was given tasks to do proof of concepts of certain things the team wanted to implement. I was an wholesome overview of the IT industry.

Tools used (Development tools - H/w, S/w): Java 8, Apache Kafka, Apache Cassandra

Objectives of the project: To create visibility in the transportation operations

Outcomes of the project: I created 2 major components of the project. The project is ongoing.

Major Learning Outcomes: Layering of code. Good coding practices. Java 8, Basics of Databases

Brief Description of working environment, expectations from the company: The working environment is quite friendly. People here are quite approachable and helpful. I was given time to learn, and then time to implement them. I was given room to grow. I think the company expects the interns to show interests and be passionate about technology. They want to see the eagerness to learn and then deliver.

Academic courses relevant to the project: OOP

Name: Urvashi Singh (2013B1A30884H)

Student Write-up

Short Summary of work done during PS-II: PROJECT1: Picking queries from text files and run them on the given database. Save the generated results in excel file and send the files to a given mail id. All the details about the database and other requirements like the filename, sheet name etc. must come from a properties file that your code must parse. Nothing should be hard coded i.e. everything that can change must be kept in properties file.

PROJECT2: Create an alerting framework to send a mail whenever a scheduled job fails. This job runs on crontab scheduling. These jobs generate a given number of files. This project was done using shell script which checked the number of files generated and the file size after a few hours of running the job.

PROJECT3: Create a documentation for the product created by my team. This was done using Sphinx.

Tools used (Development tools - H/w, S/w): JDBC Driver, SMTP, Apache POI, Sphinx, Shell Script, Eclipse, PyCharm, SQL Workbench, Postman

Objectives of the project: Automating manual work through code and reducing manual monitoring, Creating help documentation

Outcomes of the project: Successfully created a java framework for automating queries provided in a file, help documentation, alerting framework

Major Learning Outcomes: Design Patterns in java, Sphinx, Database creation and query execution

Brief Description of working environment, expectations from the company: Working environment was friendly and comfortable. Timing were flexible and the team mates were really helpful.

We were expected to be regular and hard working. The work load is less so we were expected to research a lot on a given project and find alternate methods to do the project and choose the one most efficient solution.

Academic courses relevant to the project: OOP, DBMS, DSA

Name: Vaibhav Gupta (2014A3PS0194P)

Student Write-up

Short Summary of work done during PS-II: Project1: Smart Basket Prediction :- The aim of this project was to suggest a shopping basket to a customer based on her previous shopping history. Through this project, we can build a system that saves the customer time as well as reminds her of any useful items she may have forgotten to put in the cart. This was done using an extension of FP-Tree algorithm.

Project2: Real-Time Architecture for Big-Data Processing :- This project aims to build a real-time architecture consisting of various Apache technologies to convert current batch processing system to a real-time processing system. This can enhance the response time of ASDA analytics team in case of any issues, and also increase ability to derive insights from data.

Tools used (Development tools - H/w, S/w): Apache Spark, Apache Spark-Streaming, Apache Druid, Apache Superset

Objectives of the project: Project1: Smart Basket Prediction :- The aim of this project was to suggest a shopping basket to a customer based on her previous shopping history. Project2: Real-Time Architecture for Big-Data Processing :- The project's aim was to build a big-data architecture for real-time data processing.

Outcomes of the project: Project1: Build smart basket predictor for Codeathon (an intra-Walmart competition)

Project2: Built real-time architecture for big-data processing

Major Learning Outcomes: Learnt Apache technologies like Spark, Spark-Streaming, Druid and Superset

Brief Description of working environment, expectations from the company: Friendly and flexible working environment. Very flexible timings. Good place to intern.

Academic courses relevant to the project: Data Mining and Distributed Data

Name: Shreya Kapoor (2013B1A30409P)

Student Write-up

Short Summary of work done during PS-II:

Testing of reordering of events was successfully completed with events being tested in normal, reverse, shuffled order. Also, partial reordering of events has also been tested. UI test code for Batch Management and OP Schedule has been stabilised. Around 26 scenarios were failing. Changes in xpath and methods have been implemented as per the requirement. XML state chart parser has been converted into JSON format. DB mode of orchestrating has been removed. Sender and Receiver components have been removed as every component has the required information of the previous and next components.

Tools used (Development tools - H/w, S/w): Cucumber, Eclipse, Selenium

Objectives of the project: Testing of events which can come in any sequence had to be done. UI automation of Batch Management page and OPSchedule page had to be done. XML format in order orchestrator had to be changed to json format.

Outcomes of the project: Reordering of events successfully tested. Batch management and OP Schedule pages successfully automated.

Major Learning Outcomes: Learning of tools like Cucumber and Selenium.

Brief Description of working environment, expectations from the company: Initially, the work environment was good. But my expectations did not match later on. They gave me work related to

testing only despite of asking for any other profile work. My mentor was also not very supportive towards my work and did not like when I took even little help from my team mates.

Academic courses relevant to the project: Object Oriented Programming

Name: Sujith S Pai (2014A3PS0194G)

Student Write-up

Short Summary of work done during PS-II: Major part of my work was in Testing Automation of some of the components created by the development engineers of the team Order Fulfillment. I had to write the automation code for three different components, and then write different test cases for each of them to cover up as many scenarios as possible. The Automation code was mainly written in Java, and for that, Eclipse IDE was used. The Automation suites were created using Cucumber, which uses Selenium Driver. In the Cucumber, all the test cases are written down in the form of steps, and a step definition file is created to describe the outcome of each step. The test cases were mainly written in JSON format, since the application mainly reads messages from queues and publishes the outputs to queues too, and JSON messages are the easiest and least memory occupying solution. Some time, near the end of the PS, was spent writing J-Units for some of the components to help the developers spend their time more in bug fixing and code refactoring. I was able to write the J-Units for 3 different modules and also help a bit in the refactoring.

Tools used (Development tools - H/w, S/w): Eclipse, Cucumber, TestNg, WireMock, Mockito

Objectives of the project: Testing Automation of various components of Order Fulfillment.

Outcomes of the project: Three different components were automated and pushed to pipeline. Integration Test also done successfully.

Major Learning Outcomes: Thorough understanding of Testing Automation using Cucumber.

Brief Description of working environment, expectations from the company: The working environment at Walmart was good. Team scrums were held everyday to share the blockers faced, the work goal for the day, coming up for some solution for common issues, etc. There were various team outings to have non- work related conversations with team members to have better relations with them. The team

members were generally ready to help whenever I required some kind of assistance to progress in my work.

Academic courses relevant to the project: Object Oriented Programming in JAVA

Name: Nandini Tripathi (2013B1A30818P)

Student Write-up

Short Summary of work done during PS-II: The project involves various tasks for the development of a Virtual Store on Unity. The work involves programming in C#, on Unity platform, for a Virtual Reality application. Processing.js was used for data visualisation of customer behaviour in Virtual store through heatmaps. An Augmented Reality iOS application was also developed as a POC and integrated with the Sams Club application using ARkit on Xcode

Tools used (Development tools - H/w, S/w): Unity, C#, Arkit, Xcode, Processing.js, HTC Vive, Samsung Gear VR

Objectives of the project: 1) Development of Virtual Reality Store in Unity 2) Heatmap Development in Processing.js 3) Augmented Reality app development using ARkit

Outcomes of the project: 1) Development of Virtual Reality Store in Unity 2) Heatmap Development in Processing.js 3) Augmented Reality app development using ARkit

Major Learning Outcomes: Learnt Unity3D development, scripting in C# Using Processing.js for data visualization ARkit development in XCode.

Brief Description of working environment, expectations from the company: Employees are very approachable and helpful. Hours are quite flexible. Work load varies, depending on the project requirements. Team made sure I had work to keep me involved at all times and was made to feel a part of everything going on. Overall a wonderful learning experience.

Academic courses relevant to the project: Object Oriented Programming

Name: Harshil Gupta (2013B2A80799P)

Student Write-up

Short Summary of work done during PS-II: 1) Data archival in HADOOP

Motivations

Improve performance of the Informix(our data warehouse) database

Reduce storage cost

Maintain historical data typically for audit purposes, or government mandated compliance

The inexpensive cost of storage for Hadoop plus the ability to query Hadoop data with SQL made Hadoop the prime destination for data archival.

The key Hadoop technology used to perform the archiving was Sqoop.

Sqoop takes the database table and automatically generates the necessary classes that represent the rows from the table. Once this was done, data was imported into the Hadoop Distributed File System (HDFS).

Academic Domain: Big Data

Technologies Learned: HDFS, Sqoop , SQL, Informix

2) Performance test suites automation

Motivation:

Simplify as much of the testing effort as possible with a minimum set of scripts.

Execute tests, report outcomes and compare results with earlier test runs.

Ensure production level code safety

The suites were written in java using TestNG. TestNG provides a framework to run test methods, test classes and test cases in parallelly.

I have written performance tests that covered 40+ scenarios

I also implemented concepts of multithreading that led to 80% improvement in running time of test suites

Academic Domain: Software Testing

Technologies Learned:

TestNG, SQL , REST web services, Apache Ignite, IBM MQ

Tools used (Development tools - H/w, S/w): HDFS, Informix, TestNG, SQL , REST web services, Apache Ignite, IBM MQ, JDBC, Spring

Objectives of the project: 1) Data archival in HADOOP 2) Performance test suites automation

Outcomes of the project: 1) Archived yearlong data of 1 million entries in HDFS

2) Wrote performance tests that covered 40+ scenarios that ensures production level code safety. Implemented multithreading that led to 80% improvement in running time of test suites

Major Learning Outcomes: 1) Bucketing and partitioning in HADOOP.

2) OOP and OOAD concepts.

3) MultiThreading

Brief Description of working environment, expectations from the company: My journey at Walmart started with very little knowledge of the IT industry. I had taken courses in Objected oriented programming and Operating systems as part of disciplinary electives. These courses helped me a lot in understanding various other concepts. During this period I have explored topics like Database management systems and Networking. I was fortunate enough to intern in a dynamic team where I was given every opportunity to learn the technologies used. I was given sufficient time to grasp new concepts. The team was receptive, and time and again helped me in all the challenges I faced. All the trainees and new joiners in the GIF department were given daily sessions on what every component in GIF does. It was during these sessions that I was able to learn a lot about the functioning of the entire GIF as a whole. It was amazing to witness how every team collaborates to fulfill orders to the customers keeping the lowest price on the block commitment. The exposure given has been great. I was the only intern to provide production support during the Walmart holiday season. My experience here @WalmartLabs has been amazing. It felt very engaging to work in the fortune one company.

Academic courses relevant to the project: OOP, OS, DSA, DBMS, Networking

Name: Shubham Gupta (2014A8PS0477P)

Student Write-up

Short Summary of work done during PS-II: 1. created a service for Walmart which has end to end pipeline for real time, daily level , weekly level metrics dashboards. It is used to visualise the trends , data by business people as well as Engineers. It includes application , business and system metrics.

2. I wrote a Scala script which populates out team table in a formatted way from many other tables such as email-sends, ERO and many more.

3. I explored the Graph-Databases such as Neo4J, OrientDB, JanusGraph for the team as data consists of lot of mapping between various users, as data in Graph-Database would be easy for traversal as well for providing recommendations to the users.

Tools used (Development tools - H/w, S/w): Kafka , Kibana, Grafana, Medusa , Hive , Telegraf ,ElasticSearch, Redis, Neo4J, OrientDB, JanusGraph, Airflow.

Objectives of the project: 1. To help Business people as well Engineers to visualise the trends of various metrics such as Walmart Orders, Jet Orders , Hayneedle Orders. 2. To help organise the data in a particular format removing the redundancy to consume data efficiently. 3. To make queries faster and keeping all data of a user in only 1 place as well as providing recommendations to the users depending upon neighbours.

Outcomes of the project: 1. Increased Efficiency. 2. Decreased Labour Work. 3. Increased Automation. 4. Decrease Query Time by a factor of 100. 5. Increased QPS .

Major Learning Outcomes: 1. Scala 2. Python 3. Creativity 4. DashBoarding

Details of papers/patents: Case study - A case study on the comparison of different software tools for automated scheduling and backfilling of data

Brief Description of working environment, expectations from the company: Working Environment is good. People are dealing with real time applications here and handling all the data of Walmart. Free

food is one of the privileges. My expectations from company is to provide comfort level, learning and always growing slope of an employee , which are there in WalmartLabs. I will refer this station to my juniors.

Academic courses relevant to the project: Data Structures,Pattern Designing , Operating Systems, DataBase Management, Networking.

PS-II Station: Yrals Digital India Pvt Ltd., Mumbai

Student

Name: Sanchit Aditya Nangia (2013B2A30268P)

Student Write-up

Short Summary of work done during PS-II: Keyword extraction is the area of text understanding algorithm which has been around for a while as it has been used by law firms to understand the documents much well than already done by the lawyers so that it become easy for them to quickly go through the documents .

Tools used (Development tools - H/w, S/w): Python, sklearn, pandas, numpy

Objectives of the project: Keyword Extraction lies at the out front of GISTAI, the one component which improves the presentation of the product and also helps in automating some components of the current software.

Outcomes of the project: The project turned out to have an accuracy pf 85 %.

Major Learning Outcomes: Machine learning, deep learning

Brief Description of working environment, expectations from the company: The working environment was great and taught us how to work on a project from the basis to the end .

Academic courses relevant to the project: Machine learning , Computer Vision , Deep Learning .

Name: Akshat Bordia (2013B1A20376P)

Student Write-up

Short Summary of work done during PS-II: Worked on 2 machine learning projects- 'green screen removal and twitter trends' and 1 deep learning project- 'sentiment analysis'. Green Screen included working on image data to remove green colored background using logistic regression. Twitter trends model predicted the virality versus time for tweet trend data. And, implemented a RNN model on IMDB

reviews & sentiment data to predict the sentiment of news articles for GistAI (GistAI is the product that Yrals)

Tools used (Development tools - H/w, S/w): Used our own laptops, installing cudNN to implement tensorflow models. All the implementations were done using python and made live on Gist server using PHP and HTML.

Objectives of the project: Sentiment Analysis - to predict sentiment of news titles so as to provide appropriate suggestions to users. Green Screen- To provide automated chroma keying effect to videos without using Adobe products. Twitter Trends - to provide clients with viral hashtags that can be used to make viral videos

Outcomes of the project: Sentiment Analysis - Test accuracy was 80%. Green Screen Removal- Green background was removed and results were equivalent to Adobe products. Twitter Trends - Prediction accuracy score was 86%.

Major Learning Outcomes: Python (working of pandas and numpy mainly), machine learning implementations in sklearn

Brief Description of working environment, expectations from the company: Projects were very interesting but the company has no mentors and resources to provide to anyone. If you are looking to learn and implement by yourself, Yrals provides freedom but don't expect help as there are only 3 senior employees in the company. Mentors provided to us were fresh out of college and didn't have hands on experience with machine learning. Also, there is lack of proper management and clear communication within the company. It's not a place where I would like to become a full time employee.

Academic courses relevant to the project: Machine learning, object oriented programming, AI

Name: Ankush Goyal (2014A2PS0521P)

Student Write-up

Short Summary of work done during PS-II: Text Categorization - Deep Learning RNN

Image Effects - Python Coding Ffmpeg and moviepy

Twitter Trends page on the website - PHP, Html and Css coding

Tools used (Development tools - H/w, S/w): Python, Tensorflow, Php

Objectives of the project: To be able to give users different kinds of effects each time they make a video and for each clip of the video for whatever duration of the video is.

Outcomes of the project: There is a huge improvement in the productivity as now each time a different effect is shown without having to hardcode it. These effects are automated and will generate different motion of clips each time it is made. This is currently in the testing phase and soon is going to be made the default effect on the company's website.

Major Learning Outcomes: Correct category of the news articles is predicted

Brief Description of working environment, expectations from the company: If you're producing results then it's okay, the moment you start to produce less results you will be bothered about it. I had a lot of fun here completing the projects but i wouldn't want to work here in future.

Academic courses relevant to the project: Machine Learning, C programming

Name: Himanshu Sharma (2014A4PS0392P)

Student Write-up

Short Summary of work done during PS-II: Article Summarisation- The article summariser used by the company to summarise articles was not working properly for long articles and sometimes didn't render appropriate results and needed improvement. I improved the Summariser by using a technique called Aided Summarisation. LexRank Summarisation technique is used for Extractive summarisation and the summary is enhanced using sentence ranking algorithm based on title matching score and content diversity score calculated by sentence similarity algorithm. The sentence similarity algorithm is created using gensim word2vec model.

Object Detection:- The Object detection is done using tensorflow pre-trained models trained on the COCO dataset that consists of 80 object categories. The videos are converted into a list of numpy arrays using the moviepy module. Scene detection is done on the video to reduce the time taken by the detection algorithms and is performed using the ffmpeg library. The video is converted into a series of

sub-clips that can be loaded into memory. The detection algorithms are run on these sub-clips and at the end they are concatenated using the moviepy library.

Face Recognition:- The system architecture is divided into three processes- Face Detection, Converting Detected Faces into a format that are easily comparable to the faces stored into the dataset, actual recognition by similarity calculation. Face Detection is done using MTCNN. Face Embeddings is created using FaceNet. Embedding LookUp is done Clustering algorithm.

Tools used (Development tools - H/w, S/w): Anaconda, Amazon Lambda, Amazon EC2 instance, Python, Tensorflow, Keras

Objectives of the project: Article Summarisation:-The GistAI platform ,companys key product is a video creation tool developed for news companies to convert their articles into news videos. The articles are fetched from their websites ,summarised and reduced to appropriate size for creation of videos without significant loss of information. The summariser was not working properly for long articles and sometimes didnt render appropriate results and needed improvement. Object Detection:- Object Detection is quite popular in the industry but serving good models as an API to clients for them to upload videos and get object detections is where the problem starts. Face Recognition:- The objective is to develop a Large Scale Facial Recognition System that is able to recognise identities efficiently from a database pool of millions of faces.

Outcomes of the project: Article Summarisation:- The system is live on the GISTAI Platform and is able to render good summaries.

Object Detection :- The object detection model is live on the Google Cloud ML Platform and is able to detect objects out of 90 categories.

Face Recognition:- The model is linearly scalable and is able to look up the database and recognise the faces out of a pool of millions of faces. This model is live on a AWS EC2 instance.

Major Learning Outcomes: Tensor flow Serving, Object Detection API. Convolutional Neural Network. Recurrent Neural Network, Python

Brief Description of working environment, expectations from the company: The engineers in the company are supportive and the quality of projects is good ,but the management needs improvement. The company has communication problems which often leads to unnecessary conflicts and makes the

working environment unpleasant. Working in the company is good for inexperienced programmers but do not expect a good pay or a PPO.

Academic courses relevant to the project: Machine Learning, Computer Programming

PS-II Station: Zendrive India Pvt Ltd, Bangalore

Student

Name: Sanchit Aditya Nangia (2013B2A30268P)

Student Write-up

Short Summary of work done during PS-II: Confidential work: Building an algorithm to detect stationary periods of a smartphone using motion sensors. Analysing and matching collisions detected by Zendrive. Generating real-time Hard Brake and Hard Turning alerts.

Tools used (Development tools - H/w, S/w): R (language)

Objectives of the project: Detecting the periods where the smartphone is stationary

Outcomes of the project: The detector is being used as a precursor to numerous other activity detectors to improve accuracy and reliability of predictions.

Major Learning Outcomes: Basic signal processing, analysing time-series data, programming and plotting in R.

Brief Description of working environment, expectations from the company: The working environment is similar to other US based startups. Informal, but hard working culture. The company does not expect interns to have detailed knowledge beforehand, but knowing basics of signal processing, machine learning and programming skills can help.

Academic courses relevant to the project: Digital Signal Processing, Machine Learning

PS-II Station: Zeotap India Pvt. Ltd., Bangalore

Faculty

Name: Pradheep Kumar K

Comments: Expectations from industry: Students need to have knowledge in the areas of predictive analytics, machine learning, deep learning, Artificial Intelligence and Big Data Analytics

Student

Name: Tushar Agarwal (2014A7PS0085P)

Student Write-up

Short Summary of work done during PS-II: Challenging work. Big Data. Extracting information from the pages user visited and building his interest graph over time. Core Area: NLP Machine Learning.

Tools used (Development tools - H/w, S/w): Python, Git, Bash, Keras, tensorflow, Numpy etc

Objectives of the project: To find what the user was interested in when he visited the page.

Outcomes of the project: To find what the user was interested in when he visited the page.

Major Learning Outcomes: NLP, Machine Learning at scale

Brief Description of working environment, expectations from the company: Very friendly culture.
Flexible office hours.

Academic courses relevant to the project: Information Retrieval, Machine Learning

Name: Divanshu Aggarwal (2014A7PS0154P)

Student Write-up

Short Summary of work done during PS-II: Built an automate system of zeotap only generating product with the help of java play framework, python for migration from old system and design a proper database and tables for implementation.

Tools used (Development tools - H/w, S/w): Amazon EMR Cluster, Amazon Web services, Python, Java, Play Framework

Objectives of the project: Automate the only revenue generating product in Zeotap as of now.

Outcomes of the project: Automation is provided with many new features.

Major Learning Outcomes: Proper Understanding of how to write production code, learn new languages like go, scala as part of training programme, in depth knowledge of database systems

Brief Description of working environment, expectations from the company: Work culture is quite good. You just need to complete work on time. In terms of PPO, don't expect anything from the company. How much you contribute doesn't matter in case of PPO. There are very less chances they will give you. You will learn more if you contribute more. That's all.

Academic courses relevant to the project: Database management, Data structures & Algorithms, Object Oriented Programming.

Name: Abhiram Vivek Shastri (2014A7PS0149P)

Student Write-up

Short Summary of work done during PS-II: I completely tested a backend program. We as a team of 3 did POCs on nosql databases and their performances using aerospace, citusdb, etc. We also worked on a POC on a probabilistic data structure called BloomFilter

Tools used (Development tools - H/w, S/w): Golang, Python, Postgres, Areospace

Objectives of the project: Testing, Proof Of Concepts

Outcomes of the project: Successfully tested the backend product with more than 100 test cases and 89% coverage. All the POCs are being converted into full fledged products.

Major Learning Outcomes: Testing, Software Design, OOP, nosql databases.

Brief Description of working environment, expectations from the company: Working with colleagues every day that have the same positive energy and excitement as you do. Creative work environments that are designed to feed your creativity. Regarding expectations, Ownership is the most important thing which comes to my mind. One needs to own his/her work. He/she should know all the ins and outs of the work as he will be the Go To person in case of any kind of issues related. Efficiency and good coding skills is also a primary requirement.

Academic courses relevant to the project: Distributed Systems, DBMS, OOP, Operating Systems, DSA

Name: Shivam Mantri (2014A7PS0071P)

Student Write-up

Short Summary of work done during PS-II: Built AWS resource cost monitoring tool. Built an inventory management tool which would get all the hardware and software information from user machine and post it on the server. Migrated code from php to GOLang. Also worked on AWS.

Tools used (Development tools - H/w, S/w): AWS, Datadog, Manage Engine.

Objectives of the project: Built a tool which would show the cost of using resources on per hour basis. Built a tool for machine config and security. Reduce latency of already running project.

Outcomes of the project: Cost monitoring tool built. Inventory management tool built for mac users. Code migrated from PHP to GOLang.

Major Learning Outcomes: Cloud Computing, GOLang.

Brief Description of working environment, expectations from the company: Good work culture and helpful people. Company expects to deliver quickly. Not good for people learning new who crave for learning perfection rather than speed.

Academic courses relevant to the project: Networks.

Name: Shikhar Sharma (2014A7PS0115P)

Student Write-up

Short Summary of work done during PS-II: Front End development of various web consoles that were essential products for the organizational members as well as external allies like data partners. After development of the projects, applications were tested through different frameworks.

Tools used (Development tools - H/w, S/w): Hardware – MacBook Frameworks - Angularjs, reactjs

Objectives of the project: Development of web console for automation of data extracted from telecom partners and displaying organization related statistics

Outcomes of the project: Development of two different web applications that were brought live after thorough testing.

Major Learning Outcomes: HTML, CSS, JS, ReactJS, AngularJS, design patterns

Brief Description of working environment, expectations from the company: Team culture was very good. As far as work is concerned, only the outcome is what matters, rest all depends on the employee. Proper deadlines were set for every quarter for the company, which were further drilled down to individual goals.

Academic courses relevant to the project: OOP, JS

PS-II Station: Zoomcar India Pvt. Ltd., Bangalore

Student

Name: Shivans Singh (2014A1PS0882H)

Student Write-up

Short Summary of work done during PS-II: The work was majorly related to data analytics, where the analysis done was to increase the performance of various revenue generating models.

Tools used (Development tools - H/w, S/w): SQL,Python,Excel

Objectives of the project: Increase the efficiency and performance of revenue generating models

Outcomes of the project: Increase in efficiency , Automation of report.

Major Learning Outcomes: Analysis requires to learn the user behavior.

Brief Description of working environment, expectations from the company: The working environment was quite good , being a startup we can ask help from all others.

Name: MARAMREDDY SANATH (2014A2PS0572H)

Student Write-up

Short Summary of work done during PS-II: I am the part of product and analytics team of zoomcar. Most of my work here constituted with data analytics where i needed sql and python. I was doing analysis in different areas where we propose a hypothesis or we make a change.

Tools used (Development tools - H/w, S/w): SQL,Python

Objectives of the project: Seeing the effects of the changes.

Outcomes of the project: Better understanding of user behaviour

Major Learning Outcomes: Improvement in analyzing skills and sql querying.

Brief Description of working environment, expectations from the company: The working environment here is very cool in nature. Expectation is good analyzing nature despite you don't know the required languages.

Academic courses relevant to the project: DBMS

Domain: Biological Science

*PS-II Station: Beckman Coulter (formerly ReaMetrix India P Ltd),
Bangalore*

Student

Name: Dhanya (2014A5PS0806H)

Student Write-up

Short Summary of work done during PS-II: I did verification studies on DuraClone B27 and DuraClone Tri T-Stat kits which are diagnostic kits for spondylitis and HIV. Most of the experiments are based on flow cytometry and immunological assays. I was trained on 7 types of flow cytometers and traveled to NCBS, Bangalore for conducting experiments.

Tools used (Development tools - H/w, S/w): Flow Cytometer

Objectives of the project: Verification of DuraClone B27 and DuraClone Tri T-Stat kits

Outcomes of the project: Reagent kit verification, Development of commercially relevant diagnostic tools, Approval from authorities like China FDA

Major Learning Outcomes: Flow cytometry, Immunology

Details of papers/patents: Project abstract was accepted for ILAFM-2016 Conference for oral presentation, and work for Journal is on progress.

Brief Description of working environment, expectations from the company: Working environment is extremely relaxed and casual. The work is not too hectic. Interns can learn based on how much they want to. There is a lot of free time initially, which could have been avoided by prior planning by the company management.

Academic courses relevant to the project: Molecular Biology and Immunology, Pharmaceutical management and quality control

*PS-II Station: Hindalco Innovation Centre - Semifab, Taloja, Navi
mumbai*

Student

Name: SRI CHAITANYA S. (2014A4PS0320P)

Student Write-up

Short Summary of work done during PS-II: I used different softwares to convert files from dwg format to dxf, stp and fcstd formats and used freeCAD to get area moment of inertia for the window sections, this inertia value is used while calculating displacement and stresses acting on a window section placed at a certain height on a building

Tools used (Development tools - H/w, S/w): VariCAD, HyperMesh, FreeCAD

Objectives of the project: To determine if a certain window section can be placed at a certain height on a building

Outcomes of the project: We got the area moment of inertia and the process of finding out displacement

Major Learning Outcomes: Usage of different softwares and python scripting language

Brief Description of working environment, expectations from the company: I really liked working in the company, each person has a room with a personal computer each, and all employees of the company are very helpful.

Academic courses relevant to the project: Mechanics of solids and advanced mechanics of solids

Name: Sukrit Rao. (2014A4PS0294P)

Student Write-up

Short Summary of work done during PS-II: Data analysis of the profile of aluminium sheets using process parameters from the hot rolling mill. Profile is a technical term used to describe the deviation in thickness across the width of the sheet. Profile control is important, especially for sheets used in the

printing industry. Undesirable errors will render the sheet unusable. Using scikit-learn, the machine learning library in Python, I determined the dominant parameters affecting the profile and made a regression model to predict the value of profile, given a set of input parameters.

Tools used (Development tools - H/w, S/w): SQL; Python (numpy, pandas, matplotlib and seaborn for constructing plots, scikit-learn for machine learning);Microsoft Excel.

Objectives of the project: To determine the dominant parameters affecting the profile of aluminium sheets. To make a regression model to predict the value of profile, given a set of input parameters.

Outcomes of the project: Met the objectives.

Major Learning Outcomes: Statistical analysis of an engineering problem; Procedure to follow to present data; SQL and Python programming

Brief Description of working environment, expectations from the company: Very supportive work environment. Mentor is very helpful and patient. Expected to get a project working on the plant floor, but got a multidisciplinary project topic that included aspects I learnt in my Mechanical Engineering courses at BITS along with machine learning and statistical modelling using Python programming. Colleagues and staff are friendly and help in settling down in the beginning. Main drawbacks are that the plant is located in a remote location, especially for Bombay residents and the working hours are longer than I would like (9-5:30 Mon-Fri and 9-1 on Sat).

Academic courses relevant to the project: Production Techniques I & II (the part related to rolling process).

PS-II Station: National Centre for Biological Sciences, Bangalore

Student

Name: SHIVI JAIN (2013B1A10837P)

Student Write-up

Short Summary of work done during PS-II: The canonical Wg signaling pathway is an important topic of research in cell signaling and developmental biology. The Wg ligand in *Drosophila* interacts with its signaling receptors Frizzled and co-receptor Arrow and binding receptor Dally and Dlp resulting in an activated signaling response. The key player in this signal transduction is the transcriptional activator beta-catenin (Armadillo in *Drosophila*) whose cytoplasmic levels increase when Wingless signaling is active. For this purpose, we cultured S2 pTub Wg cells expressing Wg ligand, to obtain Wg conditioned media which will then be purified. We made efforts to develop constructs expressing Wg GFP, Wg SNAP and Dfz2 GFP to visualize the said proteins under the microscope and to measure the respective concentrations. Immunostaining and Western blot assays were performed to understand the Armadillo protein accumulation in S2R+ cells exposed to different conditions resulting in signaling activation, as well to check for the presence of Wg upon subjection to various steps for purification. The expectation was to propose a model explaining the change in signaling readout observed on treatment of S2R+ cells with different quantities of ligand as well receptor expressed with respect to time.

Tools used (Development tools - H/w, S/w): I used tools like SnapGene to design plasmids, Western Blots to understand signaling, microscopy for visualization of fluorophores, Imagej for image analysis.

Objectives of the project: The main objectives were 1) purifications of Wg protein 2) expression of tagged ligand and receptor 3) understanding the role of endocytosis over plasma membrane in Wg signaling pathway 4) propose a model for understanding the change in signaling with change in concentration of ligand and receptor

Outcomes of the project: 1) I was able to standardize the protocol for Wg protein purification

2) Design an improved way to isolate Wg protein

3) Development of the Wg GFP expressing construct.

Major Learning Outcomes: This project was extremely useful in practical application of classroom knowledge. I was also able to learn how to design and trouble shoot experiments. Bangalore Microscopy Course gave me the opportunity to explore the field of microscopy superficially.

Brief Description of working environment, expectations from the company: Mayor Lab is provides a great learning opportunity for those interested in understanding cell signaling and microscopy. NCBS in general has a great infrastructure, and a large number of well organized facilities. It is one of the premier places in India for biological research. Working at NCBS, one gets to interacted with eminent scientists who have done advanced research in different fields in biological sciences.

Academic courses relevant to the project: Instrumental Methods of Analysis, Recombinant DNA technology, Genetic Engineering Techniques.

Name: Suma Chinta (2013B1A4903H)

Student Write-up

Short Summary of work done during PS-II: Cerebellum is responsible for motor control and coordination. It receives sensory inputs and motor commands, and act as an integrator to fine tune motor pattern. Zebrafish serves as an excellent model organism to understand the cerebellar circuitry and its functioning, primarily due to its easy accessibility and conserved cerebellar layered structure from fish to mammals. Purkinje neurons in the cerebellum play a key role in modulating the outputs from the cerebellum. They exhibit bistability in vivo and in vitro. Presence of two stable states has also been identified in the zebrafish. They form their inhibitory synapses on eurydendroid cells, which constitute the major output of the zebrafish cerebellum. How the activity pattern of the eurydendroid cells is affected due to the presence of Purkinje neurons in either states is not known. Many Purkinje neurons converge on single eurydendroid cell, making it difficult to study the eurydendroid cell response due to single Purkinje activity through direct electrophysiology. To overcome this, CA8-cfos:Chr2(H134R)-mcherry plasmid was constructed to optogenetically activate a population of Purkinje neurons. CA8, a Purkinje neuron specific promoter along with cfos enhancer element was cloned upstream of channelrhodopsin protein. Channelrhodopsin is a mixed cation permeable channel which gets activated on stimulation of light. This protein was fused with mcherry fluorescent tag. The plasmid expression was verified in the Purkinje neurons of the zebrafish. This constructed plasmid will facilitate

studying the effect of Purkinje neuronal states on eurydendroid cells by employing electrophysiological techniques and optogenetics, and thereby assist in understanding how the Purkinje and the eurydendroid cells together shape the output of the cerebellum.

Tools used (Development tools - H/w, S/w): Electrophysiology

Microinjection

Optogenetics

Objectives of the project: Construction of CA8:ChR2-mcherry plasmid. Microinject constructed plasmid in zebrafish larvae. Screen microinjected zebrafish for mcherry expression. Grow transgenic line of zebrafish with CA8:ChR2-mcherry germline expression. Select light source for activation of ChR2 in 7dpf zebrafish

Outcomes of the project: Successful construction of CA8:ChR2-mcherry

Major Learning Outcomes: Learned techniques of zebrafish dissection, microinjection, cloning, electrophysiology

Brief Description of working environment, expectations from the company: Individuals get assigned to an ongoing project in the lab. The working hours are flexible. It is the individual's responsibility to strive and finish the project. You get to interact with the lab members of own and various other labs in lab meets, journal clubs, talks. NCBS provides with excellent exposure in research. It is the best platform to discover various research fields in biology and interdisciplinary biology.

Academic courses relevant to the project: Animal Physiology

Recombinant DNA technology

Name: MUDRIKA SINGHAL (2013B1A10245P)

Student Write-up

Short Summary of work done during PS-II: I worked in the Department of Chemical Ecology under the guidance of Dr. Radhika Venkatesan. My project focused on interactions taking place between three

trophic levels viz. the host plant, the herbivore and the parasitoid. We studied the factors affecting the interactions taking place between these trophic levels.

Tools used (Development tools - H/w, S/w): Tools used included micropipettes, light microscope, fluorescence microscopy and a basic introduction to confocal microscopy. In the software, we used basic tools such as plotting of graphs in excel & fiji was used for editing of images.

Objectives of the project: The main objective was to study whether the host plant affects the interaction taking place between the herbivore and the parasitoid. Also, whether the host plant affected the life cycle of the herbivore and the defence level.

Outcomes of the project: It was observed that host plant affects the life cycle of the herbivore in terms of oviposition and larval fitness. Also, the % parasitization of the herbivore by the parasitoid is affected by the host plant on which it is reared.

Major Learning Outcomes: It can be concluded that host plant affects the interaction between the herbivore and the parasitoid. Hence, it can be said that three trophic levels are interrelated to each other.

Brief Description of working environment, expectations from the company: NCBS provides an excellent opportunity to explore as much as you can in the field of Biology and other related disciplines. Plenty of resources are there and the guidance provided by the supervisor and other lab mates helps you to progress a lot. Apart from that, there are various seminars and lecture series going on, which help you to know more about latest discoveries in Science and an opportunity to meet great scientists from all over the world.

Academic courses relevant to the project: Microbiology, Genetic Engineering Techniques, Plant Physiology and Ecology.

*PS-II Station: National Institute of Science and Tech. Dev. Studies
(NISTADS), New Delhi*

Student

Name: ANKIT RAJ (2014D2TS0983P)

Student Write-up

Short Summary of work done during PS-II: i worked on the the data for NISTAD survey in North East.
Worked on the MSME bulletin

Tools used (Development tools - H/w, S/w): MS-OFFICE

Objectives of the project: Organise policy debates, seminars, skill development training

Outcomes of the project: a. Policy Bulletins and Policy Briefs

b. Media briefings

c. Social media products, brief notes, short audio-visual movies

d. Human Resources in S&T policies

Major Learning Outcomes: Data Analysis, Project management

Brief Description of working environment, expectations from the company: The environment is very good. The institute is work oriented. We learn a lot of things by the kind of guidance we have here.

Academic courses relevant to the project: Techniques in Social Reserach

Name: Arpit Choudhary (2014AAPS0337H)

Student Write-up

Short Summary of work done during PS-II: Initailly as interns we were asked to prepare the literature review for the report. To gather on ground facts of implementation of various policies, I interviewed

people from all backgrounds ranging from top Govt officials to Academicians & Industry Experts. I compiled all the relevant information and prepared a state of the art UN format report.

Tools used (Development tools - H/w, S/w): MS word / Excel / Ppt

Objectives of the project: To compile efforts of the government regarding Green Skills

Outcomes of the project: An ILO India Report was published on Green Skills

Major Learning Outcomes: Exposure to working & Policy making of various Govt & Private Institutions

Details of papers/patents: A report will be published by ILO titled: "Skills for green jobs in India: 2017" with me as Co-author

Brief Description of working environment, expectations from the company: Working Environment is not at all professional and Outcome Oriented. They just expect you to be there from 9-5. The pace at which work happens is very slow. Not much learning is involved. The Mentor is only worried about the work and no inter-personal relationship is developed over time.

Academic courses relevant to the project: Intro to Development Studies (Humanities)
