

Operations in Web n Coding Club

April 1, 2016 - March 31, 2017

Events

Talk on Machine Learning, An Industrial Approach: A talk on Machine Learning; and specifically how it is used in Walmart Labs and related industries

Further resources:

<https://drive.google.com/open?id=0B33tEGRRgHg1WG5naE81eWpoMG8>

Google I/O Extended: Google I/O is an annual software developer-focused conference held by Google in San Francisco, California that was started in 2008. Google I/O features highly technical, in-depth sessions focused on building web, mobile, and enterprise applications with Google and open web technologies such as Android, Chrome, Chrome OS, Google APIs, Google Web Toolkit, App Engine, and more. The "I" and "O" stand for input/output, and "Innovation in the Open".

We had Google Developers' Group, Mumbai here in our LCH for the live screening of the Keynote of Google I/O. The streaming started at 23:00 and lasted for approximately two hours which was followed by a brief interactive discussion on the topics introduced by the Google Technology. The event observed a whopping footfall of around 120 people which included people even from outside the institute. It was fun watching and discussing about these developing ideas with like-minded people. They relished the screening with pizzas and cokes sponsored by the team GDG. The event was concluded by presenting t-shirts and stickers to the attendees.

This was our first association with GDG, Mumbai and the event turned out to be an immense success. They seemed pretty affirmative about such further collaborations in the future.

ITSP Bootcamps: A series of hands-on session on the following topics to initiate ITSP activities

1. Dual Booting Camp, Basics of Unix and Git
2. Introduction to Python
3. Introduction to Scientific Computing (and
4. Introduction to DBMS (SQL)

Hack.Weekender(5-7/8/16): The introductory in-semester event targeted for freshmen that comprised of two hands-on sessions on MIT App Inventor, followed by a 30 hour hackathon on the same platform. This event was preceded by a session(that witnessed a turnout of about 400 people) where we introduced our club(activities, motto), talked about coding in general and informally introduced the App Inventor.

The next day was spent in conducting the Basic and Advanced sessions for the Hackathon at the end of which we got Pizzas for all. The following 30 hours were spent hacking, at the end of which we had 16 entries. Top 3 entries + 1 special mention would be felicitated with prizes in our next event.

Introduction to Algorithms(17/8/16): the talk kicked off with a formal introduction about Competitive Coding, ACM-ICPC; followed by a lecture/discussion on Algorithms by Shantanu Thakoor(ex-manager WnCC, CSE fourthie). The turnout was around 150-200 people.

Reflections: An informal series of events conducted in Hostel Lounges, where speakers discuss about their CS research projects conducted as RnDs or internships.

- [21st August, 2016](#) - Pi Calculus for Security Protocols, **Kushal Babel** - Applied Pi calculus is a formalism for specifying behavior of security protocols and other concurrent processes. Why is this formalism important and how has it helped us in the past?
- [28th August, 2016](#) - Forwarding Schemes in Switched Networks with Probabilistic Faults, **Shubham Goel**
- [25th September, 2016](#) - Approximation Algorithms, **Sanat Anand** - Sanat Anand spoke on two problems in computer science namely - the traveling repairman problem and the online job scheduling problem. He described NP hardness and various approximation algorithms for the audience. This is related to his internship in Summer '16.
- [6th January, 2017](#) - Online Algorithms for Swarm Robotics, **Siddhant Garg** - Siddhant worked on several online algorithmic problems and even attended a course on Online Algorithms during his stay at TU Braunschweig. His primary work was designing and analyzing algorithms for a problem of swarm robotics. The problem was about a swarm of robots exploring an unknown area trying to minimize the time of exploration and the energy of the robots. Another problem which he worked on was on efficiently packing square shapes in a constrained area.

- [12th January, 2017](#) - SCION Computer Architecture, ETH Zurich, **Shantanu Thakoor, Sivaprasad Sudhir** - They spoke about SCION, a future internet architecture proposed by researchers at ETH Zurich. It is a clean slate architecture that aims to provide scalability, security, and control as an integral part of the network.
- [19th January 2017](#) - What Personality Do Brands Have?, **Pradyot Prakash** - Did you know that brands have a character? While Red bull portrays ruggedness, Louis Vuitton represents sophistication and caters to the elite. Through this talk, he tried to draw a parallel between the brands and the personality traits evoked by them. The discussion touched on the work he did during his internship at Adobe Research. This was a first of a kind of work connecting marketing and areas in Computer Science. He talked about how textual articles published by companies to extract these personality traits and how machine learning models can be used to check for consistency in the tone carried by the articles.
- [2nd February 2017](#) - Cloud Computing and Big Data, **Chandra Maloo** - Cloud Computing and Big Data are terms that have been trending for quite a while now. By harnessing the capability of cloud for big data analytics one can produce astounding results. In this talk, he discussed about a couple of frameworks available for big data analysis by reflecting upon the work he did last summer in his internship at Samsung Electronics. The project was about analyzing usage data of Samsung Smart Home digital appliances to gain insights into consumer behaviour and the performance of Samsung appliances.
- [12th February 2017](#) - Resource Analysis for the Leon System (EPFL), **Sumith Kulal** - Resource analysis is a current active research area wherein one tries to reason about the resource consumption of a program/system. This information, of say space and time complexity, is naturally important for both theory and practice alike. For example, prevention of side channel attack by not leaking any information gained from the physical implementation of a cryptosystem. Sumith will be presenting the latest work done on this for the Leon verification system (<http://leon.epfl.ch/>) which is published in the proceedings of POPL 2017. This includes new approach for specifying and verifying resource utilization of higher-order functional programs that use lazy evaluation and memoization. Resource consumption of lazy evaluation is particularly hard to reason about. This work was done as a part of Sumith's internship at EPFL.
- [3rd March 2017](#) - Optimal Setting of Hyperparameters, **Ritwick Chaudhary** - Machine Learning algorithms are rarely parameter free and often it seems appealing to develop machine learning algorithms with fewer of them. But some complex models involve a lot of hyperparameters and it is extremely hard to find out an optimal setting for the paramters. Typically Random Search or Grid

Search or the programmer's experience helps in setting the hyper parameters for a learning model but can't be applied if the number of hyperparameters is a lot. For tuning of such hyperparameters, we could consider the problem as a problem involving optimization of a black-box function where the function to be modelled is the learning model's performance on the training data and the domain is the space of hyperparameters. A package called Spearmint which has been developed by the University of Toronto and Harvard University was very helpful in trying out various approaches and to run the algorithms in parallel.

SAP Codejam (27/08/2016): The event was kicked off by an introductory talk by Rahul Sachdeva , giving a basic feel about SAP, and their products. After this, Krishna walked the participants through the SAPUI5, it's features, and documentation. This was followed by an ideation session, where participants were split into teams, and had to come up with their app ideas, after which we broke for lunch. We had Pizzas, and Coke for all the participants.

The afternoon was spent developing apps. 5 teams presented their ideas, the winner was awarded a book by CEO, SAP SE, and a chance to participate in InnoJAM in SAP India HQ at Bangalore.

Session on Freelancing (17/09/2016): A two hour session hosted by Abhijit Tomar and Harshit Manocha on how to get started, develop skills for freelancing, how to get and manage clients in the process.

This link can be visited for a student's guide to Freelancing:

<http://blog.abhijittomar.com/2016/09/20/student-freelancing>

Sessions on Information Security:

- **Introduction to CTFs (20/09/2016):** An introductory session on CTFs and Information Security in general. Slides:
https://docs.google.com/presentation/d/1z0hq9zJ1iIMdugeCUmt9Vhr2nX3vZ_pip_eiLt0KlpBQ/edit#slide=id.g16c5677cec_1_29
- **Ciphers (23/09/2016):** The second session on Information Security, Ciphers by Pradyot Prakash. The drive link:
<https://drive.google.com/drive/folders/0B9n7ZQMSrNqUcEZLT0FxSzhVVIE>

How to train your Spider (24/09/2016): An overnight session on Web Designing and Development, where the attendees were made to create their static homepages using

HTML5, CSS and Photoshop. This event saw the collaboration of WnCC with Institute Design Council and Mood Indigo. We got frankies, cold drinks for everyone.

Getting Started with Open Source (30/09/2016): The session was addressed by a few GSoCers from '16 edition (including Kalpesh, Meet, Vishnu). They narrated their GSoC experience and Open Source in general, gave out some tips regarding the same. This was mainly intended to motivate the students for GSoC 2017.

Coding GC 2016 (05/10/2016): A 3.5 hours long inter hostel competitive coding event was hosted on HackerRank. The results:

Winner: H3

Runner-Up: H4

2nd Runner-Up: H5

Git/Github Workshop (22/10/2016): This 2.5 hours long session was aimed at introducing Git and Github to the students for contributing to Open Source and making other collaborations.

Intertrust Hackathon (09/01/2017): WnCC had the privilege of co-sponsoring an 8 hour Hackathon by the Intertrust group, held at The Garage, Lower Parel. After the registrations and team formations, the event started with a filling morning breakfast at 10:00 AM. It was a fun, day-long event, where they provided WiFi, power, food while the participants(around 20 teams) hacked their way out of the suggested problem statements. After a good volume of time spent in cookies and hacking, the presentations began from around 6:00 PM and continued till 8:00 PM. A full course buffet dinner was laid for us before the results were announced.

The team Friesenberg(comprising of the Kalpesh and Ayush), emerged fourth in the end. In the end, we're happy to have made a worthy collaboration with Intertrust for future prospects.

[Yahoo! Japan HACK U](#) - We helped Yahoo! Japan organize a 12 hour hackathon. It was an open theme hackathon, where teams integrated hardware and software to make hacks that made our daily lives easy. The first prize was a trip to Japan. Two additional monetary prizes were given to teams with the most innovative and fun idea, and the most technically challenging idea. The CMO of Yahoo! Japan, Shin Murakami was present for the closing ceremony and prize distribution.

Projects

Seasons of Code: Seasons of Code is a programme launched by the WnCC, along the lines of GSoC without much greenery though. The incentive is similar to ITSP, based on the current form of it, the fundamental difference is that one can choose from the ideas offered by mentors who are senior undergrads, doctorate students or professors, and in some exceptional cases, startups. We plan to have a really long time frame though, until the next winter extending this programme into a mentorship of sorts into the semester. It is not just about development by the way. We have some mentors ready to take up programmes regarding competitive coding and scientific computation too.

Further resources: <http://wncc-iitb.org/soc>

ITSP: Institute Technical Summer Projects. 8 teams completed their abstracts. About half of them had a focus on computer vision.

Wiki: See the WnCC wiki; a comprehensive knowledge resource and database
<http://wncc-iitb.org/wiki>

Community Relations

GDG Mumbai: Would be sponsoring our freshmen hackathon, and much more.

Vital Contact: Jatin Malhotra, Google, Facebook India Office

Fullerton: Interested in conducting a hackathon with us.

Mahindra: Interested in conducting a hackathon with us

SAP Codejam: SAP CodeJam is a 5 to 6 hour hands-on coding and networking event where attendees share their knowledge and collaboratively develop with SAP technologies, platforms, and tools in a fun and casual environment. The events are developer community focused, supported by SAP, and explore technologies available through the Developer Center such as SAP HANA, Mobile, and Cloud.

Vital Contact: Dean ACR

Indus OS: Interested in conducting a hackathon with us.

PARI: People's Archive of Rural India. They are offering a project under SoC

Further resources: <http://ruralindiaonline.org>

Vital Contact: Supratik C. and S. Akshay, CSE Dept Council