

Vaarnan Drolia

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vellviser • vaarnan

I build things.

Education

National University of Singapore

4.48/5.00 (GPA)

Bachelor of Computing (Honours) in Computer Science

August 2010 - May 2014

- Dean's List - Sem 2, 2012-13
- **Top 2%** in the Software Engineering course out of 250 students
- **Top Student** in the Computer Security course out of 80 students
- **Top 5%** in the Parallel and Distributed Algorithms course out of 60 students
- Singapore Airlines - Neptune Orient Lines Scholar

St. James' School

Higher Secondary Education, 96.25%

April 1997 - May 2010

- **100%** in Computer Science for both 'A' and 'O' Level Equivalents
- **97.2%** in Indian 'O' Level Equivalent (ICSE)

Work Experience

Google Inc.

Cambridge, Massachusetts

Software Engineering Intern, Play Magazines

May 2013 - August 2013

- Developed a new [Play Newsstand](#) client for [Android TV](#)
- Added APIs to the back-end services to support the new Android client
- Became proficient in a range of Google technologies such as ProtocolBuffers, Guice and Guava

National University of Singapore

Singapore

Teaching Assistant, Software Engineering

August 2012 - May 2014

- Guided 45 students in 11 teams (over three semesters) as they made their first real-world application
- Initiated classroom discussions on several topics such as code quality, software testing, design patterns

National University of Singapore

Singapore

Research Assistant, Data Mining and Visualization

May 2012 - July 2012

- Developed visualizations of Twitter and Facebook data using multi-level Tag Clouds with [d3.js](#)
- Deployed the back-end server on Apache Tomcat + Jersey and the Front-End on Heroku in PHP
- Integrated the Google Maps API to add location centric information to the data

IBM Corporation

Singapore

Software Engineer, Tivoli Division

May 2011 - July 2011

- Developed a command-line interface for the Tivoli Test Automation Framework using Python and Java
- Enabled testers to deploy servers and execute automated tests on remote worker machines without them having to write any code
- Converted Jython into CPython improving execution time and responsiveness by several orders of magnitude

Project Papers

- [Threads vs Events for Server Architectures](#) 2013
- [Enhancing NUSNET using Two-Factor Authentication](#) 2012
- [Analyzing Low Level Issues Relating to the Security of RFID/NFC Cards](#) 2012
- [Analysis of the BFS Scheduler in FreeBSD](#) 2011

Project Experience

HTML5 Applications

- LearnLobe - Digital Whiteboard with video-conferencing for students (using WebRTC)
- Kontitude - Conference organizer to manage event attendees using location and data services
- MysteryStory - Game which promotes innocuous learning of AED

iOS Applications

- KBuddy: iPad Karaoke application with a Ruby on Rails + MongoDB backend
- Huff n Puff: iPad "clone" of Angry Birds with the implementation of a Physics Engine

CS2103 (Software Engineering): Led a team of 4 to develop - [QuickToDo](#) Task Manager in Java

- Project inducted into the [Hall of Fame](#) for the course
- Developed natural language input, software updating and Google Calendar Integration

CS1101S (Programming Methodology):

- Took the module CS1101S (Programming Methodology) offered only to 60 students in the **MIT Scheme** language and placed 2nd in a Robot Building Competition

Course Work

- **Parallel and Distributed Algorithms** - Byzantine consensus, Self-Stabilization, Non-blocking data structures, Mutual Exclusion, ABA Problem
- **Distributed Systems** - Voting and Consensus algorithms, RMI, Multicast, Gossip Protocols, Chord, Distributed Hash Tables, P2P Networks, Vector Clocks, Consistency Models
- **Security** - Explored attacks like buffer overflows, heap overflows, data fuzzing, XSS, CSRF and DoS Attacks, Vulnerability Scanners, ARP Poisoning and IP Spoofing, SQL and Code Injections
- **Parallel Computing** - Basketball simulation (OpenMPI) and Matrix Multiplication Intel SIMD
- **Machine Learning** - Inverse Document Frequency, Naive Bayes, Genetic Algorithms, Artificial Neural Networks, Gradient Descent

Tech Skills

- Java, Objective-C, Python, C++, C, Scheme, JavaScript, PHP, HTML5, Ruby
- Experience with a wide range of operating systems in both Windows and Unix Environments

Awards and Accomplishments

Competitions.....

- PyCon Asia - LucasFilm Top Student Programmer 2012
- Tata Consultancy Services IT Wiz Quiz - National Winner from 3.5 million participants 2009

Academic.....

- Medal for Academic Excellence in ISC 2010
- Bishop's Medal for Academic Excellence - Top Student ICSE 2008

Service.....

- Principal's Award for the Most Outstanding Pupil 2009-10
- C.V. Shunker Award for Integrity and Service 2009-10
- Reverend Canon Basil Manuel Award for the Best Scout 2009-10

Co-Curricular Activities

National University of Singapore.....

- Resident Assistant 2010-2011

St. James' School.....

- School Captain and President of Student's Council 2009-2010
- Troop Leader of Boy Scouts Association 2008-2010
- Nature Club President 2009-2010