

# Vaarnan Drolia

25, Prince Georges' Park Residences, #07-06, Singapore – 118424

☎ +65 9738 1436 • ✉ [vaarnan@gmail.com](mailto:vaarnan@gmail.com) • 🌐 <http://vaarnan.com>

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*I build things.*

## Education

### National University of Singapore

4.55/5.00 (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 Magazines/Currents client (for an unreleased Android device)
- Added APIs to the backend 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 - December 2013

- Led 30 students and guided 7 teams (over two semesters) as they made their first real-world application
- Initiated classroom discussions on several topics related to Software Engineering

### 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

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### 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

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- **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 various attacks like buffer overflows, heap overflows, data fuzzing, XSS attacks, DoS Attacks, Network and Vulnerability Scanners, ARP Poisoning and IP Spoofing
- **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

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- 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

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### Competitions.....

- Tata Consultancy Services IT Wiz Quiz Competition - National Winner with over 3.5 million participants countrywide 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

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### 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