# Vaarnan Drolia

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*I build things.*

## Work Experience

**Google Inc.**                                      **London, UK and Mountain View, California**
*Software Engineer, Android Wear*                                          *July 2016 - Current*
- iOS/iPhone developer for building the interface between Android Wear smartwatches and iPhones
- Bluetooth Low-Energy, Android and iOS stack, battery and power efficiency, shipping apps in China
- Led several projects to launch Bluetooth LE network proxy, Google Pay, Calendar, Contacts and Location sync, monthly app releases, server controlled feature-flags
- Led team to a testing culture and focus on code health to move code coverage with tests from 0% -> 70%

**Google Inc.**                                                          **Zürich, Switzerland**
*Software Engineer, Search and Knowledge*                        *November 2014 - July 2016*
- Led several key improvements to Google Search results powered by data from the Knowledge Graph
- Led infrastructure advancements in Google Knowledge Graph data processing
- Tech Lead of Knowledge Understanding Verticals effort and fostered cross-company collaboration with teams in Android, YouTube to launch products for Google IO
- Deployed global scale project for region aware language interpretation, runs on every Google search to resolve ambiguities (eg. "Boots uk" vs "boots")

**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 QA to deploy servers and execute tests on remote worker machines without writing any code
- Converted Jython into CPython to improve speed and responsiveness by several orders of magnitude

## 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)

## 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)**:
- Offered to only 60 students in **MIT Scheme** language and placed 2nd in Robotics competition

## Course Work

- **Parallel and Distributed Algorithms** - Byzantine consensus, Self-Stabilization, Non-blocking data structures, Mutual Exclusion, ABA Problem, OpenMPI, Matrix multiplication, Intel SIMD
- **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
- **Machine Learning** - Inverse Document Frequency, Naive Bayes, Genetic Algorithms, Artificial Neural Networks, Gradient Descent

## Tech Skills

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

## Awards and Accomplishments

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

Academic and Service
- Medal for Academic Excellence - National high school examination (ISC)        2010
- Bishop's Medal - Top Student National secondary school examination (ICSE)     2008
- 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