Viraj Mahesh

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Education

University of California Berkeley — 2013 — 2017

Electrical Engineering and Computer Science **(EECS) GPA:** 4.0
Expected graduation date: May 2017

Honors and Awards

Dean's Honor List: The Deans Honors List recognizes outstanding academic achievement each fall and spring semester. Requirements include completing 12 or more letter graded units in that semester and a semester GPA in the top 10% of College of Engineering undergraduates.

Relevant Coursework

Fall 2013: Single Variable Calculus **(MATH 1A)**, Structure and Interpretation of Computer Programs **(CS61A - Python)**
Spring 2014: Single Variable Calculus **(MATH 1B)**, Data Structures **(CS61B - Java)**, Classical Mechanics **(PHYSICS 7A)**, Undergraduate Research **(CS 99)**

Delhi Private School — 2009 — 2013

Rank: 1/95 **GPA**: 95/100 **Relevant Coursework** Single Variable Calculus (2 years), Computer Science (C++ - 2 years)

SAT I: 2290 **Math** 800 / **Critical Reading** 700 / **Writing** 790
SAT II: 2400 **Math Level II** 800 / **Physics** 800 / **Chemistry** 800

Experience

Undergraduate Researcher - Berkeley Laboratory for Automation — January 2014 - Present

Worked on using greedy algorithms to optimize the gauge set for Eigentaste (a collaborative filtering algorithm). The gauge set was built one joke at a time and an optimal gauge set was found that minimized the normalized absolute mean error (NMAE). The performance of this gauge set was compared to the performance of gauge sets built using other optimization techniques

Snap! Extensions Developer — February 2014 - Present

Developed extensions for the Snap! programming language. Snap! is a visual programming language used to teach CS10 - The Beauty and Joy of Computing. Developed a JavaScript extension to take screenshots and export them as PNG files. Extended Snap! to automatically rename costumes in order to prevent name duplication. Implemented a feature to allow Snap! to read accelerometer data.

Lab Assistant - CS61A — February 2014 - Present

Assisted students with projects, lab work and homework. Helped clarify key concepts such as recursion and operations on data structures such a reversal, sorting, merging, etc.

Programming Skills and Projects

Programming Languages: Python, C++, Java, SQL, MATLAB (basic), PHP, JavaScript
Programming Techniques: Recursion, Basic Search and Sorting Algorithms, Basic Data Structures (Linked lists, Stacks, Queues, Binary Trees, Sets), Android App Development, Web Development, Windows C++ API, OpenGL, Git

Falling Balls — 2013

2D Android game built using the Android SDK. Implemented a Java class to manipulate position vectors and handle game physics. Implemented collision detection and response. Used the AdMob SDK to display in-game advertisements. High scores are stored locally in an SQLite database. Future versions will include a global leader-board, social media integration and in-app purchases.

3D Pool — 2013

Simulated a 3D pool table using OpenGL and C++. Added sound and 3D texturing to make the game more realistic. Implemented C++ classes to manipulate vectors that were used to represent position, velocity and acceleration. Implemented collision detection and impulse based response.

2D Basketball — 2012

Created a 2D basketball game using OpenGL and C++. Added sound and texturing to make the game more realistic. Implemented C++ classes to manipulate vectors that were used to represent position, velocity, and acceleration. Created an online database using PHP and mySQL that handled player login, registration and high score submission. Wrote an event-handling class that detected user input and used callback functions to respond to events.