RAHUL ARYA

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Education

University of California, Berkeley
Electrical Engineering and Computer Sciences
GPA: 4.0, SAT: 1600
Expected graduation: May 2022

CS 61A: Structure and Interpretation of Computer Programs
CS 61B: Data Structures
CS 61C: Computer Architecture / Machine Structures
CS 70: Discrete Mathematics and Probability Theory
EE 16A: Designing Information Devices and Systems I
EE 16B: Designing Information Devices and Systems II
Math 53: Multivariable Calculus

Experience

Undergraduate Researcher 2019-present

- Conduct research into control theory under the supervision of Prof. Gireeja Ranade
- Work on problems related to stabilizing linear systems using random low-dimensional projections
- As part of my work, I design and run numerical simulations using Python.

UC Berkeley EECS Department 2019-present

Undergraduate Student Instructor

- Teach weekly discussion sections, hold office hours, and develop course content for EE 16A, an introductory circuits and linear algebra course
- Develop software, lead weekly office hours and small-group discussion sections for CS 61A, an introductory course covering Python, Scheme, and SQL
- Received the "Outstanding Academic Intern Award" in Spring 2019, awarded to the top 4 out of over 200 academic interns in CS 61A

King George V School 2015-18

Student Mobile and Web Developer

- Developed Android and iOS apps for King George V School displaying students' personalized schedules and upcoming homework assignments
- Achieved 200,000 app visits yearly by about 1200 unique users
- Worked using Java and Objective-C

Competitions

International Olympiad in Informatics

- Received a silver medal at the 2018 International Olympiad in Informatics, working using C++.

Berkeley Blue ACM-ICPC Team

- Selected to compete as part of UC Berkeley's top ACM-ICPC team
- Placed 3rd (as a team) at the 2018 ACM-ICPC Pacific Northwest Regional Round (Division I)

International Physics Olympiad

- Received a gold medal at the 2018 International Physics Olympiad

Projects

CS 61A Code Editor *[In development]*

- Web-based IDE for Python, Scheme, and SQL at editor.pythonanywhere.com intended for students taking the introductory computer science course CS 61A
- Integrates with the course autograder and existing debugging tools
- Built using React on the frontend and Python / Node.js on the server

Scheme Debugger

- Web-based debugging tool for Scheme, written in Python and JavaScript, used by students in CS 61A at git.io/61a-scheme
- Visualizes sub-expression evaluation and the stack at all points during program execution
- Transpiles Scheme to Python or JavaScript for significant (x100) performance gains

Queryable SQL Visualizer

- Web-based SQL visualizer at sql.cs61a.org
- Parses, executes, and generates step-by-step visualizations of SQL queries

Rubik's Cube Solver

- Designed and built a robotic Rubik's Cube solver (git.io/cube-solver) capable of scanning and solving a cube in under 2 seconds