RICHARD S. ZHU

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EDUCATION

University of California, Berkeley — **Graduation** May 2023
B.A. Computer Science
GPA 3.90
Coursework: *Data Structures and Algorithms, Structure of Computer Programs, Linear Algebra, Designing Information Systems*

EXPERIENCE

California PATH (Partners for Advanced Transportation Technology) — **Berkeley, CA**
Research Assistant — *Oct. 2019 — Jan. 2020*

- Helped evaluate potential safety impacts of the Caltrans-proposed "Yellow Alert" highway message system by automating portions of the data collection and analysis process
- Synced positional, sensor, and behavioral data collected from driving simulation experiments
- Wrote Python scripts to extract key points from trial data sets, using Python statistics libraries
- Worked with thousands of data points from over 40 unique driver trials

UC Berkeley College of Engineering — **Berkeley, CA**
Academic Intern — *Jan. 2020 — Present*

- Helped run lab sections for The Structure and Interpretation of Computer Programs (CS 61A)
- Taught fundamental CS concepts such as recursion, abstraction, and O.O.P. to 30 students
- Assisted students with understanding, writing, and debugging lab programming assignments

PROJECTS

Investment Portfolio Diversity Visualizer (Python)

- **Won the BlackRock API Prize at Cal Hacks 6.0**, the largest collegiate hackathon in the world
- Built a tool that helps users gain insight into the diversity of an investment portfolio in relation to any applicable security data attribute (e.g., sector, asset type, or country)
- Leveraged BlackRock's API to compile and categorize security data from a set of stock tickers
- Integrated MatPlotLib to visualize calculated diversity data and create a GUI for portfolio input

Bomberman Remastered (Java)

- Created an improved remake of the game Bomberman that runs on modern operating systems
- Devised a completely original "competitive mode", featuring dynamic multiplayer gameplay
- Utilized the Java Swing toolkit to design menus, handle controls, and execute game events
- Voted as one of the top three projects of the year when presented at a school project fair

Personal Website (HTML, CSS, JavaScript)

- Designed and built a personal site from scratch, utilizing the Bootstrap front end framework
- Ensured font and layout compatibility for any operating system, display size, or web browser
- Hosted page files remotely on UC Berkeley Open Computing Facility servers, via SSH transfer

Scheme Language Interpreter (Python)

- Constructed an interpreter for the Scheme functional programming language (a dialect of Lisp)
- Detailed correct evaluation procedures for exceptions, macros, and short-circuiting forms
- Optimized memory by implementing tail recursion, environments, and lexical/dynamic scoping

ACTIVITIES

Catalyst for Success — **San Diego, CA**
Treasurer, Senior Technology Mentor — *Sep. 2017 — Aug. 2019*

- Taught programming and circuitry at the library to over 200 students (Python, Javascript)
- Worked with library officials to organize regular workshops and week-long summer camps

AWARDS

Winner, CalHacks 6.0 BlackRock API Prize — *Oct. 2019*
Computer Science Scholar, Intuit Scholarship Program — *Apr. 2019*
Computer Science Scholar, Intuit George A. Hansen Program — *Apr. 2019*
Champion, Southern California Developmental Soccer League Div. 1 — *Dec. 2018*

SKILLS

Python, Java, SQL, HTML/CSS, JavaScript, Git, Unix, Bootstrap, NumPy, MATLAB