




RICHARD S. ZHU

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EDUCATION **University of California, Berkeley**
B.A. Computer Science, GPA 3.90

Graduation May 2023

Coursework: *Data Structures and Algorithms, Structure of Computer Programs, Linear Algebra, Differential Equations*

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

- Guided lab sections for CS 61A, The Structure and Interpretation of Computer Programs
- 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 Aladdin API to compile and categorize security data from 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

Winner, Intuit George A. Hansen Computer Science Scholarship

Apr. 2019

Winner, Intuit Academic Scholarship

Apr. 2019

Champion, Southern California Developmental Soccer League Div. 1

Dec. 2018

SKILLS

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