RICHARD S. ZHU

rszhu@berkeley.edu
858-371-8838
Berkeley, CA
linkedin.com/in/rszhu
github.com/richardszhu
ocf.io/rszhu

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, Differential Equations*

EXPERIENCE

UC Berkeley Dept. of Anthropology — **Berkeley, CA**
Research Software Developer — *Feb. 2020 — Present*

- Developed an automated image processing pipeline in Python, used to process 151,173 unique manuscript scans collected from an archaeological site in Queretaro, Mexico
- Employed OpenCV to assess document scan quality and optimize text legibility
- Extracted text data from selected documents via OCR, utilizing Google Cloud's Vision API
- Exported processed image data to a custom, researcher-created database setup

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

- Guided 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
- Authored solution guides to difficult homework problems, as part of a course content team

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

- Evaluated potential safety impacts of a Caltrans-proposed freeway emergency alert system
- Synced positional, sensor, and behavioral data collected from driving simulation experiments
- Wrote Python scripts to highight key points from over 40 unique driver trial data sets

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

Enigma Machine Simulation (Java)

- Constructed an accurate, configurable, and scalable simulation of the WWII Enigma machine
- Implemented text encryption, supporting an arbitrary level of cipher permutation complexity
- Handled configuration, input, and output files using Java's Scanner and OutputStream classes

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