RICHARD S. ZHU

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EDUCATION

University of California, Berkeley — **Graduation** May 2023
B.A. Computer Science — **GPA** 3.94
Coursework: *Data Structures, Computer Architecture, Discrete Math, Probability, Linear Algebra*

EXPERIENCE

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

- 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 dewarp, deskew, and binarize image scans to optimize text legibility
- Extracted text data from selected documents via OCR, utilizing Google Cloud's Vision API
- Refactored code and wrote documentation to aid future development of the project

UC Berkeley College of Engineering — **Berkeley, CA**
Course Tutor — *May 2020 — Present*

- Taught for 12 hours/week as an official course tutor for CS 61A (Intro to Programming)
- Led 6 weekly group tutoring sections, covering topics such as recursion, abstraction, and OOP
- Answered questions and assisted students with coding assignments during office hours
- Graded student projects for correctness and proper programming style

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 highlight 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 provides insights 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

Gitlet (Java)

- Constructed a working version control system that replicates the core functionality of Git
- Implemented features such as file staging, commits, branching, merging, tracking status, etc.
- Supported pushing, pulling, and fetching between remote Gitlet repositories

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

ACTIVITIES

Academic Intern, CS 61B (Data Structures) — *May 2020 — Present*
Academic Intern, CS 61A (Intro to Programming) — *Jan. 2020 — May 2020*

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