

RICHARD S. ZHU

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EDUCATION University of California, Berkeley

B.A. Computer Science

Graduation May 2023

GPA 3.90

Coursework: *Data Structures and Algorithms, Structure of Computer Programs, Linear Algebra, Intro to Electrical Engineering*

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 dewarp, deskew, and binarize scans to optimize for text legibility
- Extracted text data from selected documents via OCR, utilizing Google Cloud's Vision API
- Exported processed image and text data to a custom 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 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
- 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

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

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