Viviana Tran

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EDUCATION

University of California, Berkeley - *August 2022 to May 2026* | **GPA**: 3.86/4.0

B.S. Electrical Engineering and Computer Science

Relevant Coursework: Programming for Engineers (MATLAB), Data Structures (Java), Structure and Interpretations of Programs (Python), Computer Architecture (C) , Computer Security (GO), Intro to AI, Efficient Algorithms and Intractable Problems

RELEVANT EXPERIENCE

Computer Science Researcher for ECG Analysis Riverside, California

Cal Baptist University - *May 2024 to Present*

- Compiling 20+ papers into literature review of common ECG analysis algorithms. Developed open-source single-threaded and multi-threaded CNN from scratch to bring accessibility to ECG analysis.
- Conducting and analyzing epochs, training time, and testing time for three trials of sequential and hardware-threaded CNN on randomly generated ECG signals varying in CPU load. Resulting in a ~½ decrease in standard deviation.

Frontend Technology Mentor Berkeley, California

Berkeley Computer Science Mentors - *December 2023 to May 2024*

- Designed custom coordinator UI via Figma, integrated student filtering and mass drops for use by 300+ club members.
- Created custom student output table with TypeScript xml and CSS to showcase filtered input. Coordinating with 2 backend developers and 2 frontend developers, to create custom React components that interact with backend databases.

WORK EXPERIENCE & LEADERSHIP

Code Coach Berkeley & Corona, California

The Coder School - *January 2024 to Present*

- Guiding 15+ students aged 7-15, to code, debug, and develop personalized games in Scratch, Python, and Java.

Senior Mentor, EECS 16A Berkeley, California

Berkeley Computer Science Mentors - *August 2023 to Present*

- Guiding 8 students through UC Berkeley EECS 16A curriculum- including basic circuit design, linear algebra, statistics, signal processing - resulting in 95% satisfaction rate and content confidence from students
- Created question banks and content summary slides for in-person exam review sessions to host to 150+ students

PROJECTS

- **Convolution of Matrices Speed Up** - *April 2024:* Created naive algorithm in C for 2D convolution and integrated SIMD, open MPI, open MP, and arithmetic shortcuts to parallelize algorithm, resulted in 9x speed-up from original algorithm.
- **CPU from Scratch** - *March 2024:* Designed 5-step data-pathway in Logisim, integrating boolean logic, multiplexers, and ROM for ALU, control logic, PC selector, and immediate generator. Sped operations by 2x with 2-stage pipeline.
- **Build Your Own World** - *November 2023:* Developed randomly generated maze board class in Java. Implemented minimum spanning tree algorithms, .txt save, and hash-map to respond to avatar movement or game replays.

SKILLS

- **Software Development** - OOP, Dynamic Programming, Data Structures, Memory Management, Parallel Programming
- **Languages/ Tools** - Java, Python, C, RISC- V MATLAB, Scheme, SQL, Javascript, HTML, CSS, React, Git/Github