

Aryan Vora

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EDUCATION

University of California, Santa Cruz

Bachelor of Science in Computer Science, College Scholars Program

Santa Cruz, CA

Expected Graduation: June 2025

EXPERIENCE

Research Assistant

Jun. 2024 – Aug. 2024

Digital Camera and Computer Vision Lab @ National Taiwan University

Taipei, Taiwan

- Collaborated on the development of a **real-time hand tracking and gesture recognition system** for AR smart glasses, integrating **Time-of-Flight (ToF)** sensors with **Mediapipe** for precise 3D hand reconstruction and interactive capabilities.
- Optimized the system's ability to simultaneously process ToF depth data and hand landmark tracking, resulting in a **60% FPS improvement** (from 15 to 24 FPS), significantly enhancing real-time performance.
- Designed and built **visualization tools** for hand tracking and depth data monitoring, streamlining debugging and leading to further optimizations in system performance.

Software Engineering Intern

Jul. 2023 – Mar. 2024

Squeeze Group Shopping

Remote

- Developed a cross-platform **receipt-scanning application** using **React** for the frontend and **Firebase** for the backend, ensuring seamless functionality across devices.
- Integrated **OCRSpace** for text extraction from scanned receipts and parsed and validated OCR results using a **Large Language Model (LLM)**, converting unstructured text into structured, accurate data for storage and future analysis.
- Built a **scalable backend** to store parsed data, enabling users to retrieve, analyze, and compare previous transactions for price tracking and decision-making.
- Created a robust **price-comparison API** using web scraping techniques for real-time data aggregation from multiple e-commerce platforms, and deployed a **Flask-based** website to showcase the API's capabilities.

PROJECTS

Banana Emulator | C++

- Collaborated with a team of five to develop the **Banana Emulator**, designed to run games using **.slug** file formats, with a modular architecture including **Console, Memory, CPU, and GPU components**.
- Implemented a custom **.slug file parser**, a **GUI launcher**, video recording, input recording/playback, and a debugger with breakpoints and stepping. Utilized **SDL** for graphics rendering and input handling.

Multithreaded HTTP Server | C

- Developed a multithreaded **HTTP server** in C, using **asynchronous I/O** to handle concurrent connections with minimal latency.
- Implemented robust **input validation mechanisms** to handle diverse input types, including malicious data, ensuring stability and preventing server crashes.

Pokernow Assistant | JavaScript, HTML/CSS

- Developed a **Chrome extension**, available on the Chrome Web Store, that performs **real-time data scraping** from PokerNow sessions to calculate win rates and deliver statistical insights directly within the game interface.
- Implemented a **user-friendly interface** that integrates seamlessly with PokerNow, allowing users to access in-depth analytics and make informed decisions during gameplay.

TECHNICAL SKILLS AND AWARDS

Languages: Python, C/C++, JavaScript, Java, HTML/CSS

Frameworks: React, Node.js, Flutter, Flask, Nextjs, RestAPI

Developer Tools: Git, Bash, AWS, Firebase/Google Cloud, Postman, Figma, Mobile and Web Development, Image Detection, OpenCV, Pandas