

Michael Xu

michaelxu644@gmail.com • (650) 293-7759 • Alamo, CA • [LinkedIn](#) • [Website](#)

EDUCATION

U.S. Citizen

University of California Santa Cruz

Dec 2026

B.S. Computer Science

Santa Cruz, CA

- **Cumulative GPA: 3.96**
- Relevant coursework: Data Structures, Object-oriented Programming, Low-level Programming, Operating Systems, Database Concepts, Computer Architecture, Software Engineering, & Analysis of Algorithms

SOFTWARE-RELATED WORK EXPERIENCE

Rocket Team at UCSC

Fall 2023 - Current

Ground Control Systems Frontend/Backend Software Developer

Santa Cruz, CA

- **Real-Time Telemetry Pipeline:** Built a PySerial/WebSocket-driven system (Python, Flask) to capture and process live rocket sensor data from flights exceeding 10 000 ft, feeding dynamic React dashboards for immediate insight.
- **Automated Data Visualization:** Wrote Python scripts to ingest CSV telemetry logs and generate interactive charts and graphs, streamlining analysis workflows and eliminating manual data wrangling.
- **Full-Stack Launch Portal:** Developed a React/HTML frontend with a Flask/SQL backend to showcase past launches, live mission metrics, and upcoming events—improving team coordination and mission visibility.

PERSONAL PROJECTS

- **Mood Tracker Web Application(React, TailwindCSS, FastAPI, MongoDB):** Developed a full-stack web application for daily mood tracking and mental wellness insights using React and TailwindCSS for an interactive and detailed front end. Built a FastAPI back-end with MongoDB for persistent storage of mood entries, supporting CRUD operations and CSV data export.
- **Unbeatable Tic-Tac-Toe Bot (Python):** Engineered an AI opponent with minimax and alpha-beta pruning to guarantee perfect play and sub-millisecond move decisions; structured as a modular codebase for easy future extensions. Click and play GUI using tkinter.
- **Poker Card Recognition & Analysis Tool (Python, OpenCV, MSS, NumPy, Computer Vision, OCR):** Developed a real-time computer vision system to detect and classify cards from live poker tables with high accuracy using template matching, rotation correction, and color-based filtering. Integrated a poker odds calculator leveraging probability theory, game theory, and statistical modeling to compute hand equity, winning probabilities, and recommend optimal moves.
- **Personal Portfolio Website** – Engineered a responsive, single-page application using React.js, Tailwind CSS, and Vite to showcase projects, technical skills, and contact forms. Implemented UI/UX best practices, mobile-first design, theme toggling, smooth scroll navigation, and interactive animations, optimizing performance and accessibility. Launched using Vercel. Link can be found [HERE](#) or at the top of the document.

SKILLS

- Programming languages: Assembly, C, C++, Python, HTML, SQL, and JavaScript.
- Development platforms/Tools: MongoDB, PySerial, OpenCV, Pandas, PyMongo, FastAPI, NumPy, Git, Flask, Virtual Machines, and ReactJS.

NON-SOFTWARE-RELATED WORK EXPERIENCE

Hawaiian Poke Restaurant

Summer of 23'/24'

Server/Kitchen Staff

Dublin, CA

- Greeted and served customers their orders.
- Worked in the kitchen to clean, prepare, and cook ingredients.