

Michael Wu

909-918-9550 | mlmichaelwu@gmail.com | linkedin.com/in/michael-ml-wu | github.com/michaelwuhu

EDUCATION

California State Polytechnic University, Pomona

Expected May 2027

Bachelor of Science in Computer Science

- GPA: 3.8/4.0
- Coursework: Computer Architecture, Computer Organization and Assembly Programming, Unix and C programming, Data Structures and Algorithms, Discrete Structures

EXPERIENCE

Northrop Grumman Collaboration Project

June 2024 – Present

Ground Control Station Backend Developer

- Collaborated with 100+ engineers across Cal Poly campuses researching the development of autonomous vehicle systems.
- Engineered a telemetry simulation using C# and PostgreSQL to achieve a 2.21 ms average send and receive latency.
- Built a state management system in Rust for a multiwindow Tauri PWA, reducing desynchronization across screens by 90%.

NASA Jet Propulsion Laboratory

February 2025 – Present

Open-source Contributor

- Contributing to OML Vision, a VSCode extension aimed at modernizing system modeling workflows using a web-based UI.
- Diagnosed a macOS-specific dependency and collaborated with JPL engineers to containerize the environment with Docker for cross-platform deployment.
- Implemented inline editing for table-based UI views with built-in data type validation, enabling accurate and efficient ontological modeling language (OML) data editing in the VS Code extension.

Computer Science Society ACM Chapter

November 2023 – Present

Project Initiative Chair

- Spearheaded a project initiative program empowering 100+ students to engage in hands-on computer science projects.
- Oversaw 15+ development teams coordinating timelines in Notion and standardizing version control practices using Git.

PROJECTS

Lifeguard Vision | *Next.js, FastAPI, MediaPipe, OpenCV, Git, Github*

- Built an AI-driven web app to detect potential drowning incidents using real-time video analysis and movement tracking.
- Developed computer vision models using MediaPipe and OpenCV to classify swimmer movement and assess risk levels.
- Engineered a low-latency alert system using FastAPI WebSockets for continuous data streaming and instant notification.

Icebreak | *React Native, Node.js, Express.js, PostgreSQL, Prisma ORM, Expo, Git, Github*

- Built a full-stack mobile application in team of 20 using Express.js serving a REST API with React Native as the frontend.
- Designed guild pages in React Native with Axios for backend integration, displaying events, announcements, and members.
- Developed Restful API routes in Express.js to create, fetch, update, and delete records for guild events and attendance.

Robot Scouting App | *React, Node.js, Express.js, MongoDB, Git, Github*

- Deployed a full stack web app collaborating in a team of 3 to synthesize data from FIRST Robotics Competitions.
- Integrated heatmaps with Node.js packages to visually map robot patterns, strengths, and weaknesses.
- Implemented offline caching, doubling app users in low-connectivity venues, resulting in 300+ more data samples.

BassTab | *React, Node.js, FastAPI, Demucs, CREPE, Git, Github*

- Built a full-stack webapp that generates bass guitar tablature from .mp3 audio using AI-powered audio processing.
- Developed FastAPI backend to handle file uploads, pitch detection, and convert audio frequency data into bass tabs.

Anagrams Solver | *Python, pandas, tkinter*

- Programmed an algorithm to create and return a list of anagrams generated from any number of input letters.
- Leveraged pandas library to analyze and optimize word frequency data, to efficiently match words.
- Designed and implemented the app's graphical user interface using Tkinter in Python.

SKILLS

Programming: Java, Python, JavaScript, Typescript, HTML/CSS, C#, C/C++, Rust, SQL, Bash

Technologies: React, React Native, Angular.js, Next.js, Tauri, Material-UI, Tailwind CSS Node.js, Express.js, PrismaORM, FastAPI, PostgreSQL, MySQL, MongoDB, Redis, Postman, Docker, JUnit, socket.io, Expo Go, Vite, Vercel, Railway, Render, Git/Github