Michael Wu

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Education

California State Polytechnic University, Pomona Pomona, CA

Bachelor of Science in Computer Science *Expected May 2027*

Coursework: Data Structures and Algorithms, Unix and C Programming, Computer Organization and Assembly Programming, Discrete Structures, Calculus I, II, III, Linear Algebra, Differential Equations, Probability and Statistics

Experience

Northrop Grumman Collaboration June 2024 – Present

Ground Control Station Backend Developer

- Spearheaded collaboration with 100+ engineers across Cal Poly Pomona & San Luis Obispo, resulting in the successful development of advanced autonomous vehicle systems.
- Engineered a telemetry simulation using C# & PostgreSQL to analyze fire destruction, achieving an average send & receive latency of 2.21 ms through the implementation of websockets & optimization of data processing pipelines.
- Innovated a Rust-based state management system for a multi-window Tauri PWA, significantly improving performance by offloading frontend logic to middleware, which ensured consistent state management across multiple screens while reducing desynchronization incidents by 90%.

Computer Science Society ACM Chapter November 2023 – Present

Project Initiative Chair

- Spearheaded a project initiative program empowering over 100 students to engage in hands-on software engineering projects, enhancing technical skills & collaboration.
- Orchestrated the recruitment of developers from clubs & academic departments, forming 15 cross-functional project teams that met or exceeded deadlines, resulting in an average project delivery time reduction of 20%.
- Implemented a structured timeline management system with regular progress check-ins for all teams, achieving a 95% on-time project completion while fostering accountability & enhancing team productivity by 40%.

Projects

OML Vision | *React TypeScript, Node.js, Apache Jena Fuseki, SPARQL, Docker, Git*

- Contributing to OML Vision, an open-source project connected to NASA's Jet Propulsion Laboratory (JPL), aimed at modernizing system modeling workflows via a VS Code extension with web-based UI for OML.
- Identified a macOS-only dependency in collaboration with NASA JPL and JAXA, leading to adopting a Docker container for cross-platform support, reducing setup issues across environments by 80%.
- Implemented inline editing for table-based UI views with built-in data type validation, improving data entry speed by 90% and significantly reducing input errors in OML models.

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

- Built a full-stack mobile application in a collaborative team of 20 using Express.js serving a REST API with React Native as the frontend.
- Implemented guild pages to display organization events, announcements, and members.
- Developed API routes using Express.js allowing functionality to create, fetch, update, and delete records for school organization events & attendance tracking

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

- 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.

Anagrams Solver | *Python, pandas, tkinter*

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

Skills

Programming: Java, Python, JavaScript, Typescript, HTML/CSS, C/C++, SQL, Rust
Technologies: React, Node.js, Express.js, Git/Github, React Native, Angular.js, PostgreSQL, mySQL, MongoDB, Redis, JUnit, Material-UI, Docker, socket.io