Michael Albert

303-253-5529 | mwalbert@calpoly.edu | linkedin.com/in/michael-albert | github.com/michaelalbertslo

Education

California Polytechnic University — San Luis Obispo, CA
Bachelor of Science in Computer Engineering, GPA: 3.63 — *Sep. 2022 – June 2026*

Technical Skills

Python, C, JavaScript, React, Node.js, Tailwind, Verilog, RISC-V Assembly, Arduino, STM32, Langchain, Tensorflow

Work Experience

NREL – Software Engineering Intern — June. 2025 – Sept. 2025
Python, Data Analytics, Anaconda, GUI Design, Academic Writing + Presenting — *Golden, CO*

- Designed a full-stack cloud-connected tool using Python and Anaconda for analysis of Silicon PV cell characterization data. This software improved solar cell experiment throughput by 6000% by automating data analysis processes.
- Distributed the tool using UV for use by group members. User feedback and error reporting were used for improvements.
- Authored an academic research paper about the programming process and wrote documentation for onboarding future devs.

Cal Poly Frost SURP – Solar Power Optimization Research — Mar. 2024 – Present
Analog Circuit Design, Hardware Testing, Data Analysis — *San Luis Obispo, CA*

- Engineered cost-effective, open source, DC/DC circuits for solar power optimization, reducing product cost by 96%.
- Used LTspice for circuit validation and testing, and collected experimental data with oscilloscopes and source meters.
- Communicated with a network of international collaborators to design cost appropriate and user focused products. This Research is focused on maximizing user benefit and local manufacturability.
- Co-authored a research paper detailing design methodologies, design proof of concept, and circuit performance.

Blue Steel AI Consulting - Software Engineer — Jul. 2025 – Present
Python, Langchain, Flowise, Vector Databases — *Remote*

- Developing a full-stack CRM software with integrated AI tools, designed for deployment on web, iOS, and Google Play platforms.
- Engineered and deployed full-stack AI agents leveraging LLMs, RAG pipelines, and vector databases to provide contextual, data-driven automation solutions customized for client datasets.
- Developing internal tools using langchain and python to automate data preprocessing and create retrieval optimization layers on top of each agent's RAG pipeline.

Projects

Cluster-Duck Mesh Network | *Python, RasberryPi, Computer Vision, Networks* — Sep. 2025 – Present

- Working with a group to design a raspberry Pi LoRa radio device compatible with the Cluster-Duck protocol.
- Programming a computer vision AI program to interface with the Pi AI hat and camera. Images and GPS data are transmitted across a mesh network of the radios.

STM Nucleo Portable Weather Station | *C, STM32IDE, Arduino, Hardware Design* — Jan 2025 – June 2025

- Engineered two low cost weather stations for underwater and environmental applications. The sensors collect periodic data for geo-spacial micro-climate mapping.
- Used UART protocol for GPS integration, SPI for writing data to SD card, and analog to digital conversion for analog sensor integration.

RISC-V Processor Design | *Verilog, Vivado, RISC-V Assembly* — May 2024

- Designed and implemented a RISC-V processor on the Basys3 dev board with pipelining, hazard mitigation, and interrupt handling.
- Developed a robust ALU and instruction decoding unit, showcasing low-level hardware design and digital logic skills.