

Miguel Villa Floran

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EXPERIENCE

- Incoming Firmware Co-op** Sept. 2024 – Dec. 2024
Cisco Meraki | C99, Docker, Kubernetes
San Francisco, CA
- Software Engineer Intern** June 2024 – Sept. 2024
NVIDIA | C99, CUDA, Python
Santa Clara, CA
- Software-based end-to-end **testing infrastructure** for NVIDIA's GPUs, from the modular level all the way down to the transistor level.
- Software Engineer Intern** May 2023 – Oct. 2023
DeepWater Exploration | Electron, React, Go, C99, Ansible, TypeScript
San Diego, CA
- Accelerated the completion of **drivers and firmware for a USB camera** by **5 months ahead of the projected deadline**, exceeding expectations and delivering exceptional results.
 - Collaborated to create a seamless **cross-platform desktop application from scratch** to concurrently view and record H264 UDP video streams into mp4 files, which **outperformed OBS** and other competitors in video quality and resource consumption
 - Spearheaded the rewrite of an web application to create and configure H264 UDP camera streams, which has gained **3.4K+ downloads on npm**
- Full Stack Website Development Intern** June 2020 – Aug. 2020
omegaUp | Vue, TypeScript, Bootstrap, PHP, SQL
Remote
- Worked with a bilingual team of five Spanish and English speakers to add performance metric features to a **full-stack website used by 25,000+ users**.
 - Leveraged industry-standard project management solutions such as Jira, Trello, and Plastic VC for an efficient **Agile development** workflow.

PROJECTS

- Low Supply Indicator** – miguelvf.dev/supply-indicator | LaTeX, LTSpice Dec. 2023 – Dec. 2023
- Designed, simulated, and developed an undervoltage detection circuit using a Comparator and Op-Amp ICs. Demonstrated IR emission from sensor and actuated remote LED using photodiode.
 - Simulated and modeled performance in LTSpice and documented findings in an IEEE-formatted paper in LaTeX.
- Portfolio Site** – miguelvf.dev | Svelte, TypeScript, Tailwind, LaTeX, Docker Sept. 2022 – Present
- Developed a server-side rendered website with continuous integration delivery to test and build the project and publish to a website upon releases
- rustyNES** | Rust, WebAssembly, GitHub Actions July 2023 – Present
- Implemented a software-based replica of the 6502 processor and NES with support for 56 instructions specified by the R65000 Opcode Matrix and graphics utilities

EDUCATION

- California Polytechnic State University** Sept. 2022 – June 2026
Bachelor of Science in Computer Engineering
San Luis Obispo, CA
- Coursework:** Design & Analysis of Algorithms*, **Applied Parallel Computing & GPU Programming***, **Microcontrollers & Embedded Applications***, Software Engineering*, Circuits II, Computer Design & Assembly Language, **Graduate Artificial Intelligence**, **Systems Programming**, Discrete Structures, Data Structures, Digital Design, Object-Oriented Programming (* means currently taking)
 - Activities and societies: Computer Engineering Society (CPES), Society of Hispanic Professional Engineers (SHPE), TRIO Achievers

TECHNICAL SKILLS

Languages: C, Rust, C++, SystemVerilog, Assembly (RISC-V, ARM), Python, TypeScript, Go, Java
Developer Tools: AMD Vivado, Ltspice, Altium, FreeRTOS, Robot Operating System (ROS), Docker
Frontend: Svelte, React, Angular, Vue, HTML, CSS, Tailwind, SASS, Bootstrap, Tailwind, Jekyll, Hugo, Sphinx
Backend: Go, MongoDB, PHP, Express, Node, Django, Flask, GraphQL, Hydrogen, SQL (Postgres), FastAPI
Interests: Full-Stack Website/Application Development, Robotics, Control Systems, Embedded Systems, Bare Metal Programming, RTOS, Kernel Development, Device Drivers, Device Firmware