

## Education

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*University of California, Santa Cruz*

**September 2013 – June 2017**

Bachelor of Science with Honors in Computer Engineering with a focus on Digital Hardware.

## Experience

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*Nevados*

**July 2025 – May 2026**

**Embedded Systems Engineer**

**Hybrid / Oakland, CA**

- Revived a stale Yocto-based embedded Linux project and architected CI/CD cloud infrastructure to automate build, test, and deployment pipelines for production firmware releases.
- Designed and implemented an automatic OTA update service for solar trackers and weather stations, significantly improving fleet-wide update reliability and deployment speed.
- Integrated OpenTelemetry metrics collection and monitoring framework to characterize fleet health, enabling proactive identification and troubleshooting of system-level bugs in production environments.
- Deployed Mender-based fleet management solution to provide secure, scalable remote SSH access to field devices for diagnostics and maintenance.

*Generac Clean Energy*

**September 2023 – May 2025**

**Staff Firmware Engineer**

**Remote**

- Developed embedded control systems for managing PLC-based communications with microinverters via a Yitran PLC chip.
- Designed and implemented automatic set/verify routines for grid profiles, max power limits (including PTO states), and microinverter calibration/control parameters.
- Created robust CLI and CAN interfaces to enable full microinverter control, diagnostics, and calibration from external systems.
- Built a protocol translation layer to map SunSpec models to a proprietary microinverter protocol, supporting DER compliance.
- Participated in and supported IEEE 2030.5 (CSIP) compliance testing, ensuring protocol alignment and interoperability.
- Engineered a grid phase-lock mechanism based on voltage thresholds, replacing zero-cross detection and significantly improving PLC stability on noisy grids.
- Designed a next-generation remote control P2P protocol that re-implemented GUI objects on the client side (Java) rather than transmitting raw screen captures—improving responsiveness from 10s/frame to ~0.5s/frame.

*SunPower Corp*

**November 2018 – September 2023**

**Staff Firmware Engineer**

**Remote / Richmond, CA**

- Lead engineering efforts to work around supply chain constraints in order to ensure product supply continuity – determined alternate components and implemented manufacturing and production support.
- Lead team of 5 developers for legacy product sustaining work. This included designing creative solutions for reducing flash degradation and developing support for IEEE1547-2018 regulatory requirements.
- Architecture design and BSP bring-up for the next generation SunVault (energy storage) product.
- Developed firmware that enabled and improved communications between the PV supervisor (PVS6) and the devices it monitors/controls. Heavy focus on Enphase IQ7 micro inverters communications and support.
- Worked with utilities to support regulatory requests such as HECO, Rule21/IEEE2030.5, and IEEE1547 based grid profiles.
- Brought up firmware for municipal interconnect disconnect controller (MIDc) which manages the grid disconnect contactor switch for SunVault systems.

## Skills

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**Languages:** C/C++, Python, Bash

**Embedded:** STM32, i.MX6/8, ESP32, PSoC, Zephyr, FreeRTOS, Yocto, Embedded Linux

**Protocols:** Modbus, SunSpec, MQTT, PLC, USB, UART, CAN, SPI, I2C

**Cloud & Infrastructure:** AWS, GCP, Terraform, GitHub Actions, OpenTelemetry, Grafana, OTA systems

**Energy Systems:** IEEE 2030.5/CSIP, IEEE 1547, Rule 21, BMS/ESS, inverter systems

**Tools:** Git, VSCode, MCUXpresso, MPLabX, Espressif IDE/IDF, PSoC Creator, Microchip Studio