

MARC FARRE GARRE

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SUMMARY

Electrical and Computer Engineering student at UC Davis (**B.S. June 2028, GPA 3.67**), with two industrial internships, Linde in California and Siemens in Bangkok. Took two Python tools to **IT-approved executables on plant PCs** and presented them to **90+ engineers at Linde's global controls meeting**; co-founded Nirvaana, an AI platform launched in September 2026.

EXPERIENCE

Electrical/Controls Engineering Intern

May 2026 to present

Linde Gas, Pittsburg, CA

Full time May to Aug 2026; part time, 15 hours a week, since.

- Upgraded the **full SCADA environment of a Linde plant, 8 nodes** (2 SCADA servers, 5 operator view nodes, 1 engineering workstation), from a 200-page procedure; by summer's end, **on call alone for plant SCADA issues**.
- Built the **Node Builder** after losing 20 hours to one corrupted manual build: a Python tool that runs the 19-step GE iFIX node build for four node types, with backups, pre-flight validation and hash checks. **Cut a build the procedure budgets at 4 to 6 hours to under 30 minutes; approved by Linde IT**.
- Root-caused a **field bug that locked technicians out of iFIX** after a partial deploy; redesigned the tool to mirror the whole site tree with an integrity recount, so it **cannot recur**.
- Wrote the **SCADA Alarm Analyzer**, an offline iFIX alarm-log parser with ISA-18.2 chattering and burst checks. **Ranked 81,443 alarm events from 13 days of logs in seconds**; one tag caused a third of all alarms.
- Shipped both as single-file executables with no installer or network access; **GitHub Actions runs 279 tests**, builds and smoke-tests the .exe before every release.
- Commissioned a **new storage tank at the Loveland plant**: RSLogix ladder logic (valves, PID loops), HMI graphics and the PLC-to-SCADA link, into live production.
- Since Aug 2026: specifying and directing the **Plant Request Portal** (Next.js, Prisma), replacing the Word scope sheet plant managers use to request controls work, so every request arrives complete. **800+ automated tests**.

Electrical / Automation Engineering Intern

Jun 2025 to Dec 2025

Siemens Digital Industries, Bangkok, Thailand

- Built **two OT-to-IT pipelines** on S7-1200 and ET200SP hardware (OPC UA to EnergyManager PRO; OPC UA to Node-RED, InfluxDB Cloud and Grafana), giving engineers **live process data** without touching control logic.
- Designed a **Modbus RTU function-block architecture** that assigns device addresses dynamically; a new field device is added **without rewriting per-device logic**.
- Configured **OPC UA Sign and Encrypt** with CA/CRL certificate management, so every PLC, HMI and power-meter link is encrypted and authenticated per **IEC 62443**.
- Trained an **H2O AutoML model** predicting sugar batch duration at **under 6% error** on real batches; shipped in Streamlit.
- Wrote **10+ commissioning manuals** (PKI, CRL, time sync); presented the pipelines to **Siemens sales teams**.

EDUCATION

University of California, Davis

Expected June 2028

B.S. Electrical and Computer Engineering

GPA 3.67 / 4.00 | Dean's List: Winter 2025, Spring 2025, Spring 2026

PROJECTS

Nirvaana, AI platform (co-founder and CEO)

Sep 2026 to Oct 2026

- Co-founded and led the launch of **Nirvaana**, an AI platform that brings saved memory, a connected AI team, connectors and guardrails to non-technical users: **live on web, Mac and Windows on Sep 29, 2026**.
- Built the native **iPhone app** (Swift, SwiftUI) directing AI coding agents: **first TestFlight build 2 days after the first commit**, 13 builds in 6 days, **486 automated tests**.
- Released **desktop 0.1.7**: 11 team pull requests in one release, **886 tests** in CI, Mac build signed and Apple-notarized, shipped through auto-update.

Analog Load-Cell Scale

UC Davis

- Op-amp load-cell front end spanning the full ADC range; MATLAB calibration turned voltage into weight and **counted the beans in a bag**.

SKILLS

- Controls and industrial comms**: Siemens TIA Portal (Ladder, SCL), S7-1200, ET200SP, WinCC Unified; GE iFIX; Rockwell RSLogix, FactoryTalk; OPC UA (IEC 62443), Modbus RTU/TCP, Node-RED, Grafana; PCS 7
- Software**: Python (pytest, PyInstaller, Tkinter, Streamlit), Swift/SwiftUI, TypeScript (Next.js), C, MATLAB, Git, GitHub Actions CI/CD, AI coding agents (Claude Code)
- Hardware and bench**: op-amp front-end design, oscilloscope, soldering, I/O wiring, RS-485 termination, live loop checkout
- Languages**: English, Spanish, Catalan (all native)