Frank Laterza

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Embedded Software Engineer · UCF Computer Engineering Student

Education

University of Central Florida — Orlando, FL
Bachelor of Science in Computer Engineering — *Expected Graduation: Dec. 2025*

Technical Skills

Languages: C/C++, Rust, Python, Java, TypeScript, Next.js, VHDL, Verilog, GNU/Linux, Git, OOP, Data Structures
Hardware/Tools: Embedded Systems, FPGA, Eagle CAD, SolidWorks, Fusion 360, Lathe, CNC, Soldering, SMT/THT

Experience

Apple — Cupertino, CA
Software Engineer Intern — *May 2025 – Aug. 2025*

- Prototyped first party feature for the Apple HomePod integrated into app
- Modified Percies Time Protocol algorythm for timing syncronisation across home devices creating lightweight
- Archited software designed for distruputed systems in a home environment

NVIDIA — Santa Clara, CA
GPU Firmware Engineer Intern — *May 2024 – Aug. 2024*

- Refactored security key signing software for dynamic metadata parsing allowing clients to securely update firmware images
- Contributed to GPU BIOS build system for stack analysis resulting in prevention of unknown stack overflow errors.
- Released client facing tools exposing I2C event logs and faults to diagnose crashes for enterprise datacenter GPUs.

Eta Space — Rockledge, FL
Software Engineer Lead — *June 2023 – Current*

- Lead software development for NASA funded satellite mission designed to demonstrate lossless cryogenic liquid transfer.
- Leveraged multithreading to design software for flight computer to record scientific measurements and control external hardware.
- Archited software design for Orbital mission execution for redundant, fault tollerent system
- Designed PCB and Software allowing reprogram during flight
- Implemented fully encrypted packet telemetry system for critical mission data integrated with Rocket Lab Space Craft
- Designed UI for testing and lab use to help engineers interface with flight computer
- Developed software for embedded system stack designed to control sensors, heaters, and valves, and pressure transducers.

University of Central Florida's CREOL College of Optics and Photonics — Orlando, FL
Undergraduate Research Assistant — *Jan. 2023 – May 2023*

- Developed VHDL software for measurement of arrival of photons utilizing FPGA.
- Verified accuracy through simulation using ModelSim, resulting in 4 times the performance using timing techniques.

Projects

S.P.U.D (Custom RISC-V CPU) — Aug. 2025
C, MultiSim,

- Customized 5 stage pipeline RISC-V 32bit CPU designed drive 64x64 RGB-LED display and run games written in C
- Designed custom display driver logic using protected ram buffers allocated for colored pixel values for RGB-LED Matrix
- Developed the S.P.U.D SDK for interfacing with hardware and graphics engine. TODO FILL

Dex (Self-Balancing Robot) — Dec. 2024
C/C++, Fusion 360, Eagle Cad

- Created an open-source self-balancing robot controlled over Bluetooth using Pico SDK, FreeRTOS Kernel, and BTstack.
- Leveraged multicore real time embedded software using FreeRTOS to process controls, gather sensor data, and drive motors.
- Implemented robust and responsive control system responsible for balancing through a real time feedback loop using gyroscope.
- Designed moduler PCB for microcontroller, gryoscope/accelerometer sensors, motor drivers, debugging, and battery management