

Nathan J. Achinger

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EDUCATION

Bachelor of Science in Electrical Engineering

University of Florida, Gainesville, FL

May 2027

GPA: 3.64/4

Relevant Coursework: Microprocessor Applications II (RTOS course)

TECHNICAL SKILLS

Programming Languages: C, C++, Verilog, VHDL, Python

Embedded Systems: STM32, Tiva C Series, FreeRTOS, I2C, SPI, UART, CAN, ADC, DAC, DMA, Interrupts, Timers

Tools: Ozone, CMake, Jira, Git, Oscilloscope, Logic Analyzer, Altium Designer, LTSpice, Solidworks

WORK EXPERIENCE

Embedded Firmware Engineering Intern

May 2026 – August 2026

Lutron Electronics Co.

- Performed the system design and C++ implementation of a motor testing tool for automated roller shade products, integrating with the existing motor control code to expose previously unsupported motion adjustment.
- Engineered an on-device LUT generation system for dynamic ramp-time adjustment, solving scheduler timing and flash storage constraints.
- Built a companion Python PC app for non-technical control, driving adoption by the UX team and allowing them to produce demo videos pitching new motor animations.

PCB Designer

UF Chemical Engineering Department

Jul 2025 – Dec 2025

- Designed a custom PCB built around an ATmega328 microcontroller to replace the department's Arduino-and-breadboard setup for ECH4323L: Process Control Lab, consolidating MOSFET-driven fan control, digital temperature sensing, and heater control onto a single board smaller than an Arduino Uno.
- Engineered the board to be drop-in compatible with the lab's existing codebase, requiring no changes to the course's software for 75 students per semester.
- Served as primary point of contact with the PCB consultant, coordinating DFM feedback and the manufacturing and assembly of 75 boards.

Teaching Assistant – Digital Logic and Computer Systems

UF ECE Department

Aug 2024 – May 2025

- Led a lab section of 10 students each for two semesters, guiding them through rigorous digital logic labs.
- Hosted a live exam review session for 100+ students covering practice problems and answering questions.
- Provided individual assistance, graded assignments, and administered lab quizzes.

LEADERSHIP

UF Solar Gators Club

Electrical Chief Engineer

Jun 2025 – July 2026

- Architected the electrical system of a solar race car, selecting board locations and functionality across six custom PCBs (throttle input, motor control, indicator lights, telemetry, driver display, etc.) to deliver a fully integrated vehicle electrical system.
- Wrote embedded firmware using FreeRTOS including CAN communication, I2C device drivers, and transmission of telemetry radio packets.
- Directed a 30-student electrical team through weekly work meetings and monthly design reviews, providing hands-on feedback that caught issues before fabrication.
- Owned high-voltage system design and wiring between the MPPTs, battery pack, and motor controller, ensuring compliance with competition regulations and safe operation.
- Managed the electrical team during competition, making real-time decisions and debugging issues under high pressure.