

# Connor Haley

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## EDUCATION

### University of Florida

Gainesville, FL

*Bachelor of Science in Computer Engineering, Minor in Sociology, Eng. Innovation Cert.*

*Aug. 2020 – Dec. 2025*

## EXPERIENCE

### Embedded Systems & Software Lead - Drone Home Design Team

Aug. 2024 – May 2025

*University of Florida*

*Gainesville, FL*

- Developed vehicle that autonomously locates, retrieves, and recharges field drones to minimize mission downtime.
- Engineered Flask UI to interface with remote R/C vehicle over LTE using ROS2 on NVIDIA Nano Jetson Super
- Created embedded control system integrating sensors, microcontrollers, and comms for real-time vehicle operation
- Implemented modular control software supporting feedback loops, sensor fusion, and autonomous fault recovery.

### Engineering Team Lead - Theme Park Engineering & Design (TPED)

Aug. 2020 – May 2023

*University of Florida*

*Gainesville, FL*

- Led multidisciplinary team creating attraction prototypes integrating mech, electrical, and software subsystems.
- Designed 3D-printable roller coaster in Solidworks and engineered prototype animatronic eyes with Raspberry Pi.
- Oversaw research, schematics, & design to ensure reliable and safe show system operation within ASTM standards

## ADDITIONAL EXPERIENCE

### Audio Engineering & Technical Lead - Indian Fusion Dance Team

Aug. 2021 – Present

*University of Florida*

*Gainesville, FL*

- Co-created and led two competitive dance teams to compete nationally, while engineering mix, set, prop, & effects.
- Engineered show mixes for 100s of dancers, using Logic Pro X and a rigorous feedback process with team captains.
- Integrated creative workflows with technical design, applying signal-processing and systems-integration principles.

## PROJECTS

### Embedded Systems & Real-Time Communication Lab

Aug. 2025 – Present

- Configured UART, I<sup>2</sup>C, and SPI interfaces on a TM4C123  $\mu$ C to communicate with sensors & LCD displays.
- Developed multi-threaded RTOS apps with semaphores and scheduler logic for synchronized peripheral control.
- Designed interrupt-driven routines for coordinated sensor data acquisition and peripheral communication.

### WWIII Simulator | *React, FastAPI, MapLibre GL JS, WebSockets, OpenAI API*

Oct. 2024 – Present

- Developed an interactive WWIII sim with 220+ countries, dynamic faction control, and geopolitical boundaries.
- Built a FastAPI backend with WebSocket support for synchronized state updates, AI-powered geopolitical analysis, and live event integration designed for multiplayer gameplay.
- Implemented interactive React + MapLibre GL JS frontend with dynamic styling and responsive map controls.

## TECHNICAL SKILLS & ENGINEERING TOOLS

**Programming Languages:** C, C++, Python, Java, Assembly (ARM), Verilog, VHDL, MATLAB, SQL (PostgreSQL)

**Hardware & Embedded Systems:** Raspberry Pi, NVIDIA Jetson Nano, FPGA Design,  $\mu$ Cs,  $\mu$ Ps, UART, I<sup>2</sup>C, SPI

**Engineering Tools & Design:** ROS2, FastAPI, Socket.io, Atmel Studio, LTSpice, Quartus Prime, SolidWorks, KiCad

**Development & Integration:** Git, Visual Studio, Full Stack Web Development, Docker, WebSockets, API Integration

## RELEVANT COURSEWORK

*Real-Time Operating Systems (RTOS), Microprocessors, Digital Design & FPGA Implementation, Computer Engineering Design, Digital Logic Design, Data Structures & Algorithms, Computer Organization, Engineering Leadership, Operating Systems, Intro to Digital Signal Processing (DSP), Intro to Software Engineering*

## LEADERSHIP & INTERESTS

*Passionate about embedded software, real-time hardware integration, and control systems, complemented by experience in full-stack and interactive web design. Dedicated to leading teams through complex challenges with creativity and persistence, there is always a way.*