

# Miles Jennings

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## EDUCATION

### University of California Irvine

Irvine, CA

Bachelor of Science in Computer Engineering

Sept. 2022 – June 2026

**Relevant Coursework:** Organization of Digital Computers, Electronics I-II, Network Analysis I-II, Data Structures and Algorithms, Discrete/Continuous Time Signals

**Organizations:** HyperXite, FUSION, FASAE

## EXPERIENCE

### P2S Technology Intern

Long Beach, California

P2S Engineering

June 2025 – Present

- Assisted in the design and documentation of low-voltage and IT infrastructure systems for large scale buildings
- Supported engineers with **CAD** layout updates, wiring diagrams, and equipment schedules using AutoCAD and Revit
- Collaborated with multidisciplinary teams to coordinate technology system requirements with electrical and mechanical designs

### HyperXite – SpaceX Hyperloop

Irvine, California

Control Systems Engineer

Aug. 2025 – Present

- Designed, tested, and optimized the Hyperloop pod's control system hardware using an STM32H753ZI microcontroller programmed in **C/C++**, interfacing with thermistors, time-of-flight sensors, and INA219 current sensors while evaluating components for performance and cost improvements over prior pod iterations
- Ensured hardware-software compatibility by defining system constraints and key telemetry parameters based on feedback from team surveys identifying the most critical data points to track in the GUI
- Implemented a Continuous Integration (CI) pipeline using GitHub Actions to streamline testing, version control, and code deployment across subteam

## PROJECTS

### AudioVisor | I2S, Python, nRF52840

Sept. 2024 – Present

- Built an audio-reactive visor using the Adafruit nRF52840, using **Python** to receive and handle microphone input through **I2S** communication protocol for real-time sound magnitude detection
- Prototyped and iterated hardware designs, including LED driver layouts and signal pathways, while troubleshooting performance issues throughout development
- Researched and evaluated components to satisfy sensitivity, latency, and power needs, guiding system architecture and part selection

### Remote-Controlled Precision Cargo Drone | FUSION, Ardupilot

Dec. 2024 – June 2025

- Designed a UAV using an STM32 based flight controller, incorporating lidar and optical flow sensors capable of **real time data transmission** through UART and ESP32
- Troubleshoot PWM output and ELRS radio communication, increasing transmission reliability by 50%

### Hand Gesture Rover | Arduino, NRF, ICM

April 2024

- Designed and built a gesture-controlled rover using Arduino and NRF24L01 modules for wireless communication
- Programmed real-time motion tracking with the ICM's 9-axis IMU to convert hand tilts into directional movement, applying data filtering and SPI-based communication
- Designed and assembled both transmitter and rover hardware, including power circuitry, motor driver integration, and sensor mounting for reliable embedded control

## TECHNICAL SKILLS

**Languages:** Python, C/C++, Java, Verilog, RISC-V, MIPS Assembly, MATLAB

**Software/Tools:** Revit, AutoCAD, Bluebeam, Arduino IDE, Vivado, LTSpice, Cadence, Linux, Git, GitHub, STMCubeIDE, MobaXterm

**Hardware:** Oscilloscope, Multimeter, Circuit Design & Analysis, Microcontrollers, ESP32, Embedded Systems, PCB Design, Arduino, Power Supplies