

Brody Fiorito

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EDUCATION

University of Pittsburgh

B.S. Electrical Engineering

Expected: May 2029

Pittsburgh, PA

- GPA: 3.9/4.0
- Relevant Coursework: Calculus I–III, Linear Algebra & Differential Equations with EE Applications, Physics I–II, Programming for Engineering (C, MATLAB), Fundamentals of Engineering Design

EXPERIENCE

Panther Racing

August 2025 - Present

Low Voltage Engineer

- Prepared and maintained electrical schematics, wiring diagrams, and pinout documentation using RapidHarness, Draw.io, and spreadsheet-based BOMs
- Reviewed component, sensor, and subsystem datasheets to ensure electrical compatibility, proper signal levels, and safe integration within vehicle electrical systems
- Assisted in electrical system planning and layout, including sensor power distribution, grounding strategies, and signal routing
- Configured and utilized pCAN for CAN bus communication with a MoTeC M1 ECU, including node configuration, message arbitration, and network diagnostics
- Manufactured and assembled wiring harnesses, including wire preparation, branching, connector crimping, soldering, and quality verification

PROJECTS

ESP32 Lissajous Signal Generator - <https://github.com/brodyfiorito/lissajous-box>

Dec 2025 - Present

- Engineered a mixed-signal device generating phase- and frequency-controlled stereo sine waves, streamed over I²S to a PCM5102A DAC for Lissajous figure visualization on an oscilloscope
- Implemented FreeRTOS firmware in Embedded C featuring a dual-mode state machine supporting waveform generation and USB audio passthrough, with ring buffer audio buffering and ADC signal conditioning via hysteresis filtering and exponential moving average smoothing
- Designed full schematic and PCB layout in Altium Designer, integrating USB-C power delivery, LDO regulation, ESD protection, and multi-stage power filtering for low-noise mixed-signal operation
- Applied datasheet-driven layout techniques with attention to grounding and signal integrity; firmware validated on development hardware prior to PCB fabrication

Stepper Motor MIDI Player

2023

- Developed an Arduino-based system that generates music by driving stepper motors at specific frequencies using MIDI data; implemented Python-based MIDI-to-serial conversion and Arduino firmware to control motor timing and step rates

TECHNICAL SKILLS

- **Programming & Scripting:** Embedded C, MATLAB, Python, Arduino IDE, Linux
- **Engineering & Design Tools:** Altium Designer, RapidHarness, Microsoft Office
- **Hardware & Embedded Platforms:** ESP32 (ESP_IDF, FreeRTOS), Raspberry Pi, CAN bus (pCAN and MOTEK M1), I²S, UART, ADC, USB
- **Lab Equipment:** Oscilloscope, Multimeter, Signal generator, Bench power supply