Carter Boyles – Electrical and Computer Engineer

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Education

Oregon State University: 3.98 GPA — **Corvallis, OR | Sep. 2022 – Present**

BS Electrical and Computer Engineering — **Expected Graduation: Jun. 2025**

Experience

High Altitude Liquid Engine Team (AIAA) — **Sep. 2022 – Present**

· Design and fabricate Avionics/Flight Computer on a PCB for a 2-stage high-altitude rocket

· Construct Avionics/Flight Computer to navigate with GPS and IMU, control stage separations, and use telemetry communication systems.

Solar Plane Team (AIAA) — **Sep. 2022 – Present**

· Design and implement Avionics for an autonomous, solar-powered plane

· Optimize the performance of solar panels and electrical systems, extend battery life by 90 mins.

· Implement Maximum Power Point Tracking (MPPT) to maximize power during flight.

Peer Tutor — **Sep. 2023 – Present**

· Assist my peers with the goal of helping them succeed in their classes while simultaneously solidifying my foundational knowledge of fundamental subjects and coursework

Projects – (more at *https://boylecar.github.io)*

Infrared-Remote Controller

· Used FPGA and SystemVerilog to design and implement a circuit that interprets IR signals from a remote to control the output on a display using finite state machine and signal processing.

Commercial Watch Winder

· Developed a consumer electronics product; required PCB design and fabrication, programming a Microcontroller with Assembly Language to drive a motor, prototyping, woodworking, and machining.

Turing-Complete 8-Bit Computer

· Designed and built computer architecture to create a Turing-complete computer with CPU, program counter, memory, ALU, and more. Create and execute programs with Assembly Language.

Audio Filtering Music Device

· Produced an audio device that filters music into channels with different frequency bands using 2nd order Sallen-key topology filters. Included an amplification stage with variable gain for each channel.

Technical Skills

Languages: Python, C/C++, SystemVerilog, HTML, CSS, Assembly Language

Skills: FPGA prototyping, PCB Design, Circuit Design, CAD Modeling (NX), Matlab, Avionics Design, Power Systems, Automation, Embedded Systems