W. ETHAN ARMSTRONG

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Current Address
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PERSONAL STATEMENT

I am a passionate Full Stack Embedded Engineer, with experience in software engineering, electronics design, and firmware design. I Have been a part of numerous engineering projects where I used my electrical and computer expertise in the implementation of controls and electronics systems. I work well as a part of both single and multi-disciplined teams, as well as having leadership experience both in technical and non-technical fields.

EDUCATION

The University of Washington
B.S. in Computer Science — July. 2025
Minor in Physics

ENGINEERING EXPERIENCE

Second Sun Labs Corporation, Seattle WA

Software/Electrical Engineer – Smart Farm Electronic Hardware — Jan. 2025 - Present
The hardware design and testing of IoT soil sensors and accompanying hub.

- Designed and calibrated soil salinity sensor.
- Built Battery Management and Power Supply Systems.
- Coordinated with stakeholders for project requirements and solutions.

Firmware/Electrical Engineer – Node Gateway
The development of a modular cellular sensor hub for use in infrastructure and logistics. — Jun. 2023 – Jan. 2025

- Wrote highly efficient, low power firmware.
- Designed custom communication protocol to reduce data loss.
- Researched and developed hardware solutions.
- Assisted in the creation of communication middleware.

Society for Advanced Rocket Propulsion, University of Washington

Payload Avionics Lead - ARES — Jun. 2024 – Jun. 2025
The Advanced Recovery Experimental System, to autonomously pilot rockets back to the launch pad with a Rogallo wing.

- Created modular PCB stack featuring sensors, power supply, and RF communications.
- Designed custom Sub-GHz RF PCB.
- Implemented RTOS based flight software and control algorithms.
- Lead Avionics team through full design cycle, coordinated with other subsystem teams.

Payload Avionics Lead - RCS — Nov. 2021 – Jun. 2024
The development of a high altitude cold-gas reaction control system for vertical stabilization.

- Designed STM32 based flight computer.
- Engineered sensor fusion algorithm for attitude determination.
- Developed PID Stack based control system.
- Developed simulations for testing and tuning.

University of Washington, Aeronautics and Astronautics

Research Team Member - Orbital Transfer Vehicle — Sept. 2024 – Jun. 2025
The research and development of an OTV for bringing future SARP, and AA, satellites into final orbit.

- Planned and Implemented firmware for engine monitoring and control.
- Developed thermo-couple and pressure-transducer MUX.
- Created remote control protocols and UI.
- Coordinated and worked with a large interdisciplinary team.

TECHNICAL SKILLS

- C++, C, Rust, Python, Java, JS, HTML, HTTP, CSS, Real-Time OS, MATLAB
- Simulink, KiCad, Altium, Embedded Software, Electrical Circuit Design, Soldering
- Networking, Linux, NGINX, PCB Manufacturing, Teaching Experience,