

Liam Jennings

Boston MA | Seattle WA

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OBJECTIVE

Software and robotics engineer with embedded firmware, hardware validation, and real-time controls experience. Proficient in C/C++, Python, and Linux, with hands-on debugging using oscilloscopes and SWD debuggers. Seeking to apply my embedded systems background to challenging electromechanical problems.

EDUCATION

Bachelors in Computer Science, Worcester Polytechnic Institute (WPI) August 2021 - May 2025
with Minor in Chinese Studies, GPA: 3.93/4.0

Masters In Robotics Engineering, WPI August 2024 - Dec 2026
GPA: 3.75 / 4.0

SKILLS

Languages: C, C++, Python, Rust, Java, Typescript, MATLAB, Mandarin Chinese (Intermediate)

Software & Technologies: Linux, Git, CI/CD, Docker, RTOS, MQTT, TCP/IP, SolidWorks CAD (CSWA)

Lab Equipment: Oscilloscopes, SWD Debuggers, Embedded Data Acquisition

EXPERIENCE

Hardware Test Engineering Co-op, Symbotic, Boston MA July - December 2025

- Owned end-to-end execution of hardware validation tests for embedded and electromechanical subsystems — developing procedures, running tests, and documenting failure criteria and results to support team-level V&V efforts.
- Redesigned a HIL traction motor test fixture with closed-loop PID control to apply calibrated braking loads simulating real-world conditions; migrated from USB-serial to MQTT over Ethernet to support reliable multi-month accelerated life testing.
- Built automated Python tools for log parsing and time-series visualization using InfluxDB, reducing debugging time by 40%; maintained tooling under Git with unit tests and CI/CD pipelines.
- Diagnosed hardware faults and characterized subsystem behavior using oscilloscopes and embedded instrumentation.

Backend Computer Security Software Intern, STR, Boston, MA May - August 2022

- Developed a diagnostic tool in .NET and C# to introspect live .NET applications and document data structures, object classifications, and memory addresses. Used by team members to aid in the development of other projects.

PROJECTS AND ACTIVITIES

WPI Formula Electric 2025 Electronics & Software Team August 2024 - May 2025

- Performed hardware bring-up and validation of STM32-based mixed-signal PCBs for real-time sensor acquisition and control on a Formula SAE electric racecar.
- Implemented and debugged embedded communication protocols including CAN, UART, SPI, and I2C across multiple embedded modules; verified signal integrity and timing using an oscilloscope.
- Performed SWD debugging and signal-level testing on custom boards to verify hardware against design requirements.

Racecar Telemetry Dashboard, WPI January - July 2024

- Designed and built a real-time telemetry system using C++, Linux, Raspberry Pi, and CAN bus.
- Implemented time-series logging and live visualization for debugging and performance analysis of vehicle subsystems.

Sliding Mode Controller for Simulated UAV Interception, WPI October - December 2023

- Designed and implemented a nonlinear sliding mode controller in MATLAB for simulated quadrotor interception, with predictive kinematic modeling and a motion planning pipeline for dynamic intercept trajectories.

ROS Robotics Development, WPI 2023 - 2024

- Developed TurtleBot3 and robotic arm simulations in ROS/Gazebo, implementing Deep Q-Learning, TF chains, kinematics/dynamics modeling, and motion planning with RViz.