Elizabeth Levin

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Education

Worcester Polytechnic Institute   **Aug 2023 - May 2027**
- BS in **Computer Science** and **Robotics Engineering**
- GPA: **3.9/4.0**

Work Experience

Draper - Embedded Software Engineering Intern   *Jun 2025 - Aug 2025*

- Developed a new hardware abstraction layer (**HAL**) to enable rapid prototyping across multiple microprocessor architectures, replacing an existing system with a more scalable design.
- Collaborated with **30+** embedded systems engineers to gather feedback and define functional requirements; implemented the HAL in **C** with a modular **CMake build system** and a **Docker based toolchain.**
- Standardized and streamlined embedded development workflows, reducing setup time by over **50%** and code duplication by about **30%**, improving scalability and cross-platform compatibility across the department.

NEST Lab – Student Robotics Researcher   *Feb 2025 – Jun 2025*

- Conducted **collaborative SLAM** research on a **MathWorks** sponsored project to develop a multi-robot mapping system for the **MATLAB** Navigation Toolbox.
- Implemented multi-robot simulation environments in **Gazebo** and integrated them with **ROS 2** to enable communication, mapping, and coordination across multiple agents.
- Developed **frontier-based** exploration and multi-robot **path planning** using a merged global occupancy map, improving exploration efficiency and coverage in unknown environments.

Walmart Advanced Systems and Robotics - Robotics Software Engineering Intern   *Jun 2024 – Aug 2024*

- Developed automated reliability testing systems for wheel wear and capacitor bank diagnostics.
- Programmed microcontroller-based control systems in **C++** to drive four industrial servos over **RS-232**, simulating long-term wheel wear and adding **wireless monitoring** for remote test supervision.
- Designed and implemented a **Python GUI** interfacing with a smart electronic load and power supply over serial, enabling real-time capacitor health analysis and simplifying on-site testing.
- Deployed the diagnostic software to warehouse facilities, improving **reliability validation** workflows and reducing manual testing time by over **30%**.

Projects

Pixis-Slide - A DIY Digital Musical Synthesizer
- Developed open-source beginner and budget friendly musical synthesizer using an **ESP32**
- Optimized performance by leveraging an **RTOS** to run both ESP32 cores, dedicating one to live audio synthesis and the other to USB communications

LSToday - A Social High School Scheduling App
- Created Android Version of popular high school scheduling app
- Used **Firestore NoSQL** database with a **Python** web API and **Google Analytics** integration
- Managed a team of other student developers on both IOS and Android

Skills

Technical Skills: Embedded Systems, Robotics, Mobile Development, Web Development
Languages and Frameworks: Python, C, C++, Java, JavaScript, Kotlin, SQL, Firebase, ROS, Pytorch