ERIK PARKER

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Project Portfolio

EDUCATION

University of New Haven, West Haven, CT

Master of Science in Electrical Engineering — May 2026

Bachelor of Science in Electrical and Computer Engineering - *Summa Cum Laude* — May 2025

Minor in Computer Science — **GPA: 3.93**

SKILLS

- **Programming:** Python, C, C++, Java, ROS1/ROS2, VHDL
- **Hardware:** Embedded Systems, FPGAs, Motor Controllers, SBCs (Raspberry Pi, Jetson), Sensors, Power Electronics, PCB Design (Altium, KiCad), SMD/THT Soldering
- **Simulation & CAD:** Isaac Lab, Gazebo, Autodesk Inventor
- **Systems & Architecture:** Linux, Docker, Networking, Systems Engineering, Project Management
- **Instrumentation:** Oscilloscopes, Logic Analyzers, Signal Generators, DAQs, PyVISA

EXTRACURRICULARS AND LEADERSHIP

Mars Rover Robotics Team: President, Project Manager, Lead Engineer — **August 2022 – May 2025**

- Founded and built a University Rover Challenge team and rover from scratch.
- Secured funding, recruited members, and guided one of the smallest teams to 24th/108 in 2024 and 13th/110 in 2025 at the international competition.
- Directed hardware, firmware, and software design, gaining hands-on experience in systems engineering, project management, and cross-disciplinary integration.

Currently coaching the new team on their journey towards success.* — **August 2025- Present

Nationwide Eclipse Ballooning Project: Consultant, Team Lead — **May 2023 – April 2024**

- Launched 30 weather balloons to collect weather and ozone data
- Helped develop ventilation system for neutral buoyancy.

Study Abroad: Prato, Italy — **February - May 2022**

- Volunteered in a local library to teach English to elementary-aged students.

WORK EXPERIENCE

Graduate Research Assistant | University of New Haven — **July 2025 – Present**

- Developing a system for risk aware robot navigation using MEMS accelerometers, real-time structural health monitoring, and custom DSP and signal analysis algorithms.
- Using Boston Dynamics' Spot Quadruped to test and deploy risk monitoring system.

Electrical Engineering Intern | Strain Measurement Devices — **June 2024 – Aug 2024**

- Designed several PCBs, wrote firmware, and developed software for numerous projects.
- Developed software to interface with test equipment to automate multi-channel sensor testing.

Advanced Energy Intern | TRC Companies — **May 2023 – November 2023**

- Developed Python-based software tools to automate a time-consuming and tedious process.
- Numerous applications of VBA and other Excel-based automation projects.

PROJECTS (SELECTED)

- **IoT Pasta Robot** - ESP32-based autonomous pasta maker with closed-loop strain gauge control and smart home integration; connected to house's plumbing to fill and drain.
- **ESP32 Browser-Controlled micro-ROS Robots** - Developed a fleet of ESP32-based robots running micro-ROS, controllable through a browser interface that automatically assigned users to available robots and provided real-time joystick control via ROS topics.
- **Mars Rover Autonomy System** – From scratch autonomous navigation, object recognition, search algorithm, state machine and ArUco tracking system.
- *See portfolio for more*: **https://erikparker.engineer/#projects**

HONORS

- Eta Kappa Nu (IEEE Honor Society); Provost's Assistantship; 2nd Place, IEEE Capstone Competition; Tagliatela College of Engineering Award; Dean's List (every semester)