Elizabeth (Ellie) Rabenold

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Education

Massachusetts Institute of Technology (MIT)   Cambridge, MA

Electrical Engineering and Computer Science (6-2)   August 2019 – Spring 2024

Indian Hill High School   Cincinnati, OH
                                                                                   August 2015 – May 2019

Experience

Relativity Space| *Robotics Hardware Intern* | Long Beach, CA| June 2023 – August 2023

Relativity Space is a rocket company using industrial robotics and wire arc additive manufacturing (WAAM) to produce 3D-printed parts for its flagship rocket, Terran R.

- Supported sensor development and integration in large-scale WAAM print cells. Developed hardware and software infrastructure to collect in-cell audio and environmental data to inform welding conditions.
- Developed a PLC framework for version control and variant management across print cells. This framework will enable scalability and maintainability in IPC code as the company shifts from development to full-scale production printing.

SpaceX | *Test Engineering Intern* | Cape Canaveral, FL | May 2022 – August 2022

Interned on the team responsible for designing and engineering the tests that ensure the Dragon 2 vehicle is safe for transit to the International Space Station.

- Designed a data acquisition device (DAQ) for use in testing on Dragon 2 capsules. The DAQ will support pressure testing, water-seal testing, and center of gravity testing on the vehicle, and will save an estimated 24 hours of labor per Dragon 2 campaign.
- Obtained test technician qualification and assisted in testing operations of the Dragon 2 vehicle used in the October 2022 NASA Crew 5 mission.

Oracle Corporation | *Software Engineering Intern* | Remote | June 2021 – August 2021

Release Engineering group: Linux and Virtualization Team.

- Used Python and Bash scripting to monitor upstream Linux releases.
- Developed a framework using Python and Elasticsearch to track Enterprise Linux packages as they proceed through Release Engineering's pipeline.
- Created a dashboard with Grafana to display the SLA lifespans of Enterprise Linux packages and the division's productivity and release statistics.

Research

MIT Laboratory for Electromagnetic and Electronic Systems | *Undergraduate Researcher* | August 2023 – Ongoing

Undergraduate researcher with MIT LEES, investigating hybrid switched-capacitor power converters for applications in space technology, with a specific focus on startup schemes in FCML converters.

MIT Media Lab | *Undergraduate Researcher* | January 2022 – May 2022

Undergraduate researcher with the Responsive Environments group at the MIT Media Lab. Involved in a project focused on integrating soft electronics into textiles.

- Developed C++ framework to characterize the properties of a 2-dimensional array of textile-embedded IMU nodes. Used Processing 4 to visualize nodes in real time.

Other

6.131 – Power Electronics Laboratory | *Learning Assistant* | August 2023 – December 2023

Learning assistant for 6.131. Assisted students with power converter circuit design and implementation in hardware.

6.9110 – Gordon Engineering Leadership Laboratory | *Teaching Assistant* | August 2023 – Ongoing

Teaching assistant for 6.9110. Assist with course operations.

Coursework

- **EE**: Power Electronics Laboratory, Power Electronics, Circuit Analysis, Dynamical System Modeling and Control Design
- **CS**: Artificial Intelligence, Machine Learning, Computation Structures, Fundamentals of Programming, Operating Systems Engineering, Interactive Data Visualization and Society
- **EECS**: Digital Systems (FPGA), Secure Hardware Design, Intro to Embedded Systems

Skills

Python, C, System Verilog, TwinCAT3 Structured Text, Beckhoff/EtherCAT hardware, standard Electrical Engineering lab skills

Activities

MIT Varsity Lacrosse (Two-time Captain), MIT Divest (Co-president), Gordon Engineering Leadership (GEL) Program