

ELLIOT SCHMELING

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Education

Ohio Northern University (ONU) / Ada, OH / 3.49 GPA / May 2027

Bachelor of Science in Mechanical Engineering, ABET Accredited

- Computer Science Minor
- Dean's Scholarship (August 2022-Present), Dean's List

Relevant Experience

NASA Glenn Research Center / Cleveland, OH / Electric Propulsion Co-op

August 2025-Present

- Designed and implemented supervised and unsupervised **machine learning** models in **Python**. Including **autoencoders**, **KMeans**, **DBScan**, and decision trees, to classify transient oscilloscope data.
- Collected and processed **FTIR** spectra from departmental contaminants to build a searchable database; supported by complementary material analysis using **SEM** and other spectroscopy tools.

Nottingham Spirk / Cleveland, OH / Firmware Development Co-op

January 2025-August 2025

- Collaborated with engineering teams to design and prototype smart, connected products integrating **IoT technologies**.
- Assisted in the **development and debugging** of firmware for **embedded systems** to ensure functionality and reliability.
- Bare-metal **firmware development**, including interfacing with peripheral devices and controlling output systems, using communication protocols such as **SPI** and **I2C**.

Graphic Packaging International / Kenton, OH / Engineering Intern

May 2024-January 2025

- Developed and implemented a program in **XAML** and **C#** to communicate with multiple devices via Serial and **SQL** protocols to automating data collection processes.
- Assisted in creating solutions to mechanical problems within manufacturing processes.
- Designed parts using **SolidWorks** for rapid prototyping and manufacturing via **3D printing**.

Relevant Projects

Avionics Flight Computer

January 2025-Present

- Assisted in the selection and design of hardware for custom avionics flight computer for model rocketry.
- Leading the development of **low-level embedded software** with **Zephyr RTOS (Real Time Operating System)**, focusing on data acquisition and system diagnostics.

SAE AERO Competition team

August 2022-Present

- Contributed to the design, construction, and integration of a competitive model aircraft as part of a student team.
- Focused on precision assembly and **seamless component integration**.

NEAT Genetic Neural Network

July – November 2024

- Developed a NEAT (NeuroEvolution of Augmenting Topologies) **neural network** and **genetic algorithm** from scratch in **C++**.
- Created a flexible, standalone system for easy integration into new projects.

Solar Thermal Collection System

January – May 2024

- Collected and analyzed thermal data, identifying and resolving issues across electrical, physical, and software domains.
- Maintained and updated **Python** codebase for a thermal data collection system, ensuring reliable data acquisition and system functionality.

Other Technical Skills

- Inventor/Fusion360
- Proficient in programming languages: Java, JavaScript, HTML, CSS and MATLAB
- laser engraving/cutting
- Wood and metalworking tools
- AutoCAD
- Arduino
- Experienced with computer science concepts: databases, MongoDB, HTTP/HTTPS, Linux administration and AWS
- Visual Studio Code/Community/Git/Jet Brain

Other Activities

- **American Institute of Aeronautics and Astronautics** (AIAA), ONU (August 2022-Present)
- **Association for Computing Machinery** (ACM), ONU (August 2023-Present)
- **Boy Scouts of America**, Cincinnati OH (2015-2022)
- **Stage Manager/Set Construction** Technical Theatre, Sycamore High School (2018-2022)
- **Engineering Club**, Sycamore High School (2018-2022)

Related Interests and Hobbies

- Learning new skills through personal projects
- Knitting, cooking, reading, archery, and aviation