Cole Fuerth

🌐 colefuerth.github.io | ⦿ colefuerth | ✉ colefuerth@gmail.com | 📞 519.300.2877

SKILLS

Languages : Python, C/C++, Java, Rust, Markdown, MATLAB, LaTeX, bash
Tools : NumPy, Pandas, Jupyter, Docker, PCB Fabrication, Battery Management Systems, Git, 3D Printing, Regex, Embedded Systems, Serial/I2C/UART/CAN, Arduino, Linux, PLC/Robotics, RF(433/2.4/BT)

EXPERIENCE

University of Windsor   Jan. 2022 – Present
Research Assistant   Windsor, ON

- Developed a cloud-based data collection and SOC-estimation tool for Battery Management Systems
- Made a dynamic interface between **I2C/UART** on **Arduino** and **Python** over USB using JSON packets, allowing for real-time data collection and analysis for thesis projects.

Smyth Innovations   November 2021 – July 2022
Embedded Engineer   Chatham, ON

- Developed a custom ECU for an RD400 motorcycle using **EasyEDA** for board design, and **C++** for software development. Custom wiring and PCB assembly done by hand.

PROJECTS

Electric Motorcycle

- Programmed and assembled an electric dirt-bike.
- Assembled using an **Arduino Mega** for control with **C++**, a touchscreen display, custom aluminum panels, isolated inputs and outputs, and **all-custom power distribution and analog sensing**, mounted on a stripped frame.

Electric Long-boards

- Electronics enclosure designed and 3d printed, with custom wiring.
- Batteries are a **completely custom design**, built with 21700 Lithium cells.

AI Battery Characterization

- A CNN built with **NumPy** and **Keras** that can characterize messy real-world battery data using the Combined+3 lithium model.

NumpAI

- A hard-coded, fully functional convolutional neural network that can recognize handwritten digits.
- I used **Python** and **NumPy** to implement the neural network on the MNIST dataset.

wasping

- A concurrent ping engine written in **Rust** that can ping thousands of hosts at once.

EDUCATION

University of Windsor
BSc[H] Computer Science with Artificial Intelligence Specialization | Minor in Mathematics   Windsor, ON

- Won first place at CSGames 2023 for the Emulators category.

St. Clair College   Sept. 2017 – May 2020
Electronics Engineering Technology, Associate Degree   Windsor, ON