

Cole Fuerth

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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 using **TensorFlow**, **AWS**, **RabbitMQ** and **MongoDB**. Programmed in **C++** and **Python**
- Assisted MASC students in developing data collection tools for the study of Battery Management System (BMS) performance and Battery Thermal Management Systems (BTMS) prediction.
- Made a dynamic interface between **I2C/UART** on **Arduino** and **Python** over USB using JSON packets, allowing for real-time data collection and analysis.

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.

AI Battery Characterization

- A CNN built with **NumPy** and **Keras** that can characterize messy real-world battery data using the Combined+3 lithium model.
- Represents the entire SoC curve of a battery in 8 floating point numbers, allowing for accurate, adaptable predictions of the battery's state of charge from a small embedded controller.

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.

EDUCATION

University of Windsor

Sept. 2020 – Aug. 2023

Honours Computer Science with Artificial Intelligence Specialization | Minor in Mathematics

Windsor, ON

- Computer Science **teaching assistant**
- Electrical Engineering **research assistant** working with **Advanced Energy Storage Systems**.
- **89% Major Average**; received Dean's List for each completed class year.

St. Clair College

Sept. 2017 – May 2020

Electronics Engineering Technology, Associate Degree

Windsor, ON

- Skills gained involve DC and AC circuit analysis, analog signals processing, digital systems, C language and PLC programming, micro-controller programming and PCB design and assembly.
- **3.9 Cumulative GPA**; received the Student Leadership Award for graduating class year