

EDUCATION

09/2020 - PRESENT **Bachelor of Engineering**, 3rd Year Engineering Physics, McMaster University – Hamilton, ON

- Maintaining a 3.8/4.0 cGPA, Dean's list (Maintaining a 9.5 GPA or above)

SKILLS

Programming: Basic Machine Learning Techniques, Fundamental C++, Fundamental Python 3 (Libraries: Numpy, TensorFlow, NIDAX API, SciPy), MATLAB

Platforms: Fundamental Unix Environment, Windows, Fundamentals in Linux Systems

Hardware: Arduino Uno, Oscilloscopes, PIC Controller, PCB Design, Soldering, Circuit Design, Basic Power electronics, Basic Understanding in Battery Pack Production

Software: LabVIEW, Autodesk Inventor/Fusion 360/Eagle, NI Multisim, LT Spice, Fundamental Simulink, Ansys Granta, Microsoft

Soft Skills: Strong communications, organizational ability, independent skills, team skills.

EXPERIENCE

05/2022 – Present **Lab Assistant 2**, Center for Mechatronic and Hybrid Technologies – Hamilton, ON

- Produced LabVIEW and python scripts for data acquisition with DAQmx drivers
- Worked with signal processing in Bi-Polar Operational Amplifiers
- Took data on several different stators and motors
- Testing 18650 batteries by using electrical signal processing

01/2022 – Present **Undergraduate Teaching Assistant**, McMaster University – Hamilton, ON

- Assisted students in coding using Python, utilizing Autodesk Inventor, and Materials Science
- Marked exams, labs, and design studio reports

10/2020 – Present **Electrical Team Lead**, McMaster Solar Car Project - Hamilton ON

- Redesigning a pre-charge circuit and ATS circuit for the power management board
- Working on Producing an MPPT board from scratch
- Simulated various circuits
- Produced schematics and PCB design in **Fusion** and **Eagle**
- Producing training modules and applicant selection for the team in Fall 2022

PROJECTS

04/2022 – Present **Battery Pack Production**, (McMaster Solar Car Project)

- Produced a viable battery pack for an output of 96V and \approx 30 Amps.
- Researched various phenomena in batteries such as discharging and charging curves
- Working on producing and assembling a prototype battery pack using Boston Power cells
- Attempting to model battery packs in Simulink and COMSOL
- Currently undertaking HV training at the McMaster Automotive Research Center (MARC) battery lab facility

08/2021 – Present **Multiple Power Point Tracking Board**, (McMaster Solar Car Project)

- Designed a boost converter with an active snubber circuit for the MPPT board
- Designing a viable control loop system to produce consistent power to the HV line
- Utilizing simulation software such as **Simulink**, **Falstad**, **LT Spice**, and **Multisim**
- Researched solar panel arrays and uses in MPPT's

10/2020 – Present **Power Management Board**, (McMaster Solar Car Project)

- Redesigning a pre-charge circuit and ATS circuit for the power management board
- Utilizing simulation software such as **Simulink**, **Falstad**, **LT Spice**, and **Multisim**
- Researched various topics such as Motor Controllers, Power Electronics, and Battery systems
- Produced schematics and a PCB board in **Autodesk Fusion 360**