

Jordan Goldbloom

in /jordan-goldbloom

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Skills

CAD: Solidworks, Fusion 360, AutoCAD, Bentley MicroStation

Software: Python, C++, JavaScript, Matlab, Ladder Logic, Git

Hardware: Arduino, Eagle, Altium, Soldering, Oscilloscope

Fabrication: 3D-Printing, Hand-tools, DFMA

Education

University Of Waterloo

Candidate For BAsC in Mechatronics Engineering

2021 – 2026 (expected)

Cumulative GPA: 3.8

Experience

Battery Systems Product Design Engineering Intern

Ample

May 2024 - August 2024

San Francisco, California

- Developed a test fixture to diagnose and resolve critical errors caused by spring-loaded connectors during thermal shock
 - Developed 4 modular PCBs in **Altium** that replicate the geometry of the battery's internal boards to accurately simulate connections and measure internal resistance across up to 170 pogo pins in thermal chamber from -40 to +72 °C
 - Programmed ESP32 in **C++** to control multiplexers, communicate with ADCs using **I2C** and record data in thermal shock
- Designed, modified and created drawings for >15 metal and injection moulded parts in **Solidworks** for next-gen battery
- Assisted with assembly, controlled detention, and tear down of 10+ batteries to evaluate thermal propagation

Automation and Controls Assistant

Viryl Technologies

September 2023 - December 2023

Toronto, Ontario

- Introduced a variety of automated sequences to an early-stage R&D project by implementing **PLC ladder logic** changes, new pneumatic routing, and new electrical components reducing the number of operators by 50%
- Created a tool using **OpenCV** in **Python** to detect the critical dimensions of new parts and summarize how well measurements meet specifications while increasing the testing speed by 6x previous hardware test setups
- Spearheaded 5+ engineering change orders to enhance the efficiency of automated vinyl-record presses, including integrating sensors, control loops, resolving mechanical issues with hydraulic presses, and writing SOPs for field updates

Product Design Coop

Virtek Vision Inc.

January 2023 - April 2023

Waterloo, Ontario

- Led project to control motorized mount for positioning Virtek Laser Projectors in manufacturing environments
 - Created a **full-stack C++** application to communicate with hardware using **UART** based protocol allowing the user to manually jog the mount or automatically move to positions based on the state of the projections
 - Designed and sourced parts for a 10"x10"x6" electrical panel and custom wire harness to convert **Ethernet** to **RS-485** and provide power and communication to both the motorized mount and projectors while prioritizing cable management

Engineering Assistant

Toronto Transit Commission (TTC)

May 2022 - August 2022

Toronto, Ontario

- Developed a new internal **Python** application using **Matplotlib**, **Pandas** and **Pysimplegui** to process signals from radio frequency logs, visualize the data and create customizable spreadsheets used to detect track-side and onboard issues

Extra Curriculars

Tractive (High Voltage Systems) Lead

University of Waterloo Formula Electric (FSAE) Student Design Team

May 2023 - Present

Waterloo, Ontario

- Spearheaded integration of electrical components for 140s6p segments of a 588V battery pack, in **Solidworks** including wire routing, terminal integration, and PCB mounting in tight packaging, while maintaining isolation between HV components
- Created Voltage Sense PCBs in **Altium** to replace wired connections with unreliable fusing, reducing parts needed by >90%
- Designed and fabricated electro-mechanical charging and jacking mechanism for battery by retrofitting a hydraulic table cart with a new handle, mounting points, automatic locking breaks, charger electronics and a custom wire harness

Team Captain

First Robotics (FRC) Student Design Team

September 2017 - June 2021

Toronto, Ontario

- Led a team of 30+ students in prototyping, designing and manufacturing 150 lb competition robots in a six-week time frame
- Oversaw production of ball intake mechanism including **rapid prototyping**, design and integration in a large **Fusion 360** assembly and manufacturing metal and 3D printed parts resulting in a mechanism that could intake 5 balls in 3 seconds