

# Steven Brown

## Engineering Physics Co-op Student

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### Skills

**Software:** Java, C/C++, Python, MATLAB, Qt GUI Design, Bash Scripting  
**Electrical:** Altium Designer, Oscilloscope, Analog & Digital Circuits, Soldering  
**Mechanical:** SolidWorks, Servomotor & Ultrasonic Sensor use, Prototyping, Hand Tools

### Education

#### The University of British Columbia

Sept 2019 – May 2024 (expected)

- Engineering Physics, BAsC
- Cumulative GPA: 4.00
- Deans Honour List & Trek Excellence Scholarship Recipient

Sept 2019 – Current

### Work Experience

#### Firmware Validation Engineer Co-op – Tesla, Inc. Palo Alto, United States

Sept 2022 – Current

- Writing python / C++ / C tests for test automation coverage
- Designing firmware architecture (UML tools)
- Writing embedded C code for behavioral improvements and feature introductions
- Development of test cases on software-in-loop platform
- Writing specifications for embedded firmware behaviors

#### Electrical Systems Team – UBC Formula Electric Design Team

Sept 2021 – Current

- Member of the team responsible for designing and testing electrical components of an electric formula racecar.
- Designing, testing, and soldering custom PCB schematics and layouts.
- Designed a Tractive System Active Light PCB using Altium Designer for the Formula Electric 2022 car.

#### Embedded Software Engineer Co-op – NZ Technologies Inc. Vancouver, Canada

Jan – Apr 2021

- Developed embedded C++ applications for deployment on Windows & embedded Linux.
- Developed interactive GUIs using Qt, while managing software testing, stable build releases, and version control.
- Implemented a data logging system in C++ for different embedded touchless elevator devices.
- Kept track of sensed actions, errors, and sensor data, which was stored in a daily report and sent out automatically by email through bash scripts.
- Report included a version of the data in excel format where it could be further analyzed.

### Technical Projects – More projects available on website at top of this resume

#### Machine Learning Car Simulation

Sept – Dec 2021

- Developed an autonomous car that drives through a simulated environment, obeying traffic laws, and returns license plates and associated parking IDs using machine learning and computer vision.
- Google Colab was used to access python libraries such as OpenCV for computer vision and Tensorflow to design and train neural networks.
- Car was able to complete the full driving course and scan all 8 license plates correctly in 60 seconds.

#### Engineering Physics Robot Competition

May – July 2021

- Our team of four was tasked to build 4 fully autonomous robots lowered by a sky crane to find 6 cans on an 8' x 8' surface and place them in a wine case within 60 seconds.
- Prototyped different mechanical components from cardboard which were eventually designed in SolidWorks.
- Custom designed separate power and logic circuit boards using Altium Designer.
- Designed firmware in C++ for an STM32F3 MCU in a finite-state machine format including PID drive.

### Interests

- Avid weightlifter & runner with combined training up to 5 times per week.
- Played senior basketball and continue to play in a men's league once per week.