Steven Brown

Engineering Physics Co-op Student
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Skills

Software: Python, C/C++, Rust, Java, MATLAB, Qt GUI Design, Bash Scripting, Git
Electrical: Altium Designer, Oscilloscope, Analog & Digital Circuits, Soldering

Work Experience

Vehicle Software Engineer Co-op – *Tesla, Inc. Palo Alto, United States* **May – Aug 2023**

- Designed, implemented and tested a python/rust model of the low voltage system for all car platforms.
- The model calculated voltages/currents and introduced a feedback loop with other car component models.
- Collaborated with multiple teams to integrate the different models together.
- Created an infrastructure for other car component models that need time dependent circuit analysis.
- Received a full-time performance review of 4.5/5 - reference available upon request.

Vehicle Software Engineer Co-op – *Tesla, Inc. Palo Alto, United States* **Sept – Dec 2022**

- Worked on the low voltage firmware validation team.
- Developed component models in python/rust for software-in-loop platforms.
- Wrote python/C tests for test automation coverage.
- Designed firmware testing architecture (UML tools).

Software Team – *UBC Formula Electric Design Team* **Jan 2023 – Current**

- Member of the team responsible for designing and testing firmware for an electric formula race car.
- Implemented a UART driver and currently designing a generic step-through debugging system for various PCBs.
- Previously on the electrical systems sub-team where I designed a tractive system active light PCB.

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.

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 OpenCV for computer vision and Tensorflow for neural network training.
- 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.

Education

The University of British Columbia **Sept 2019 – Apr 2025 (expected)**

- Engineering Physics, BASc
- Cumulative GPA: 4.00
- Deans Honour List & Trek Excellence Scholarship Recipient **Sept 2019 – Current**

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 twice per week.