Brent Champion

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EDUCATION

Queen's University   **September 2017 – May 2021**

Bachelor of Applied Science in Computer Engineering (Dean's Scholar)
Relevant Courses: Machine Vision, Algorithms, Databases, Data Structures, Engineering Design
Undergraduate Teaching Assistant: Data Structures

RELEVANT EXPERIENCE

Acoutera Renovations – Vancouver, BC

Full Stack Software Engineer Intern (Remote)   **May 2020 – Present**

- Working with MongoDB, Express, React and Node.js in a small, agile team to build quality software.
- Introduced new approaches to continuous integration, code splitting and managing tasks, helping to increase the team's productivity and ease of collaboration throughout our weekly sprints.
- Developed a web scraper in Python to automate collecting product information, contributing to a significant increase in available products. Developed webhooks to continuously update website catalogue.

Robotic Computer Vision Lab – Queen's University

Research Assistant   **September 2019 – Present**

- Developed OpenCV programs to enhance the quality and efficiency of a data acquisition system.
- Lead on a software engineering project to operate and automate an industrial Gantry Robot in C++.
- Developed internal libraries in C++ to expedite the team's software development processes.
- Working with a team of graduate students on novel techniques for 3D image processing.

Summer Research Intern   **May 2019 – August 2019**

- Automated a data acquisition process for a point cloud imaging and processing system.
- Used OpenCV in C++ to build a stereovision system
- Designed and built hardware and software testing rigs for various depth sensors, used to compare against those found in industry. Collected and processed quality data for a published thesis with the experiments.

Queen's Formula SAE Design Team

Electrical Lead   **July 2019 – July 2020**

- Led a team of 12 students to design and develop all electrical components for a Formula SAE style race car.
- Transitioned the team's powertrain system to a new engine, involving reconfiguring most electrical sub-systems. Improved performance and tuning capabilities by integrating an Electronic Throttle Control system.
- Fostering a safe learning space for team members, mentoring students in both electrical and software design.

Electrical Team   **September 2017 – June 2019**

- Designed wiring schematics and PCB layouts. Assembled and tested PCB's for various electronic systems.
- Developed an electronic throttle control system, opening new opportunities for autonomous driver assists.

ADDITIONAL EXPERIENCE

Code Life Ventilator Challenge   **April 2020**

- Worked in a multidisciplinary team to design, prototype and ship a working ventilator within 2 weeks.
- The team placed in the top 9, out of over 1000 submissions spanning 93 countries.

Western Hacks V   **November 2018**

- Built and demoed an IoT system within a 36-hour time frame that integrated Machine Learning and multiple API's in a web-based application to help students track grocery shopping and monitor food waste.

Queen's Conference on the Business Environment Today (QBET)   **October 2018**

- Category winner in the IBM case competition, prepared and presented a case study within 2 hours.

Goodyear Select – Automotive Service Technician Apprenticeship   **January 2016 – July 2016**

- Diagnosed and fixed diverse car problems. Learned proper use of machinery and general shop etiquette.

FUNCTIONAL SKILLS

- **Languages:** Proficient: C++, C, Python, JavaScript, OpenCV   Familiar: Java, HTML, CSS, NodeJS
- **Software:** Proficient: Microsoft Office, Linux, Git, Altium   Familiar: ROS, AWS, SolidWorks, Jira