

# Brent Champion

[brent.champion@queensu.ca](mailto:brent.champion@queensu.ca) | [linkedin.com/in/brentchampion](https://www.linkedin.com/in/brentchampion) | [github.com/bchamp](https://github.com/bchamp)

## EDUCATION

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

Bachelor of Applied Science in Computer Engineering (Dean's Scholar)

Relevant Courses: Algorithms, Databases, Data Structures, Electronics, Engineering Design

Undergraduate Teaching Assistant: Data Structures

## RELEVANT EXPERIENCE

### 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.
- Worked in a team to collect and process data for a pose determining software pipeline.

#### 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 – Present

- Led a team of 12 students to design and develop all electrical components for a Formula SAE style race car.
- Transitioned the team's engine system to a new engine, which involved reconfiguring most of the electrical sub-systems. Improved engine performance and tuning 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.

### EngLinks

#### Peer Tutor

April 2018 – Present

- Tutored 30+ students 1-on-1 in computer programming, data structures, electronics, calculus and physics.
- Ran course review sessions for groups of 60+ first year students, prepared review books for 400+ students.

## ADDITIONAL EXPERIENCE

### Royal Conservatory of Music

September 2006 – Present

- Completed Conservatory Grade 10 for Piano in 2016 with First Class Honors.
- Working towards the Associate of the Royal Conservatory Diploma for 2021.

### 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

- Gained valuable experience working with the integration of technology in the business environment.
- 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.
- Gained a deeper understanding of the underlying systems in a car through building a model V8 engine.

## FUNCTIONAL SKILLS

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