William **Qin**

william.qin@uwaterloo.ca | williamqin.com | github.com/WilliamLQin

Skills

Languages	Java, C#, C/C++, Python, JavaScript, HTML, CSS
Tech/APIs	Firebase, Arduino, Raspberry Pi, OpenCV, Amazon Web Services (AWS), Muse
Frameworks	Bootstrap, jQuery, Jekyll, Node.js
Tools	Git, Unix, Bash, Unity, Android Studio, Visual Studio, VSCode, IntelliJ, Eclipse

Experience

Team 4308: Absolute Robotics | Captain | Mississauga, Ontario, Canada — Sep. 2017 – Jun. 2019

- Managed a 2018 **world championship semi-finalist** FIRST Robotics Competition team of **100+** members to raise **$35 000+** and build an industrial-sized robot
- Built and refined a multi-version **web app** with **Firebase hosting and database**, **Bootstrap**, and **jQuery** to collect, display, and analyze data, informing match strategy and alliance selection
- Led a software team of 5 people to program essential robot controls and **autonomous** driving mode in **Java**

D&R Electronics | Intern | Bolton, Ontario, Canada — Jul. 2017 – Aug. 2017

- Developed a **C#** Windows application to automate message creation for road lightboard signs, saving up to one hour of worker time per message created
- Optimized testing for mechanical and electrical defects with a custom hardware setup, reducing test times by **50%**

Projects

Vision Motion | Android Application — Oct. 2017 - present

- Launched a **motion tracking app** on the Google Play Store with **1800+** total installs and **400+** active users, facilitating lessons and experiments in physics for university researchers and high school teachers and students
- Leveraged **real-time computer vision** with **OpenCV** on a phone to track the motion of an object and render a graph of its position, velocity, and acceleration
- Integrated **Firebase database and authentication** to allow users to save and upload their data for use across devices

Project BRETT | Drone Application | First Year Design Project — Nov. 2019

- Built a drone with an infrared sensor and camera that **autonomously maps heat sources** in an area
- Developed a drone program in **C/C++** to collect temperature data in real-time and create a file for offline processing

Disco Alarm | IoT Application | Hack the 6ix – **Finalist** — Aug. 2018

- Created a silent LED **sunrise alarm clock** with customizable patterns/colours using a **Raspberry Pi** programmed in **Python**
- Implemented **voice control** with Amazon Alexa by using **Node.js** in an **AWS Lambda** function connected to **AWS IoT**

Think Tank | Unity Game | Electric City Hacks 2 – **Top 6** — Nov. 2017

- Built a **C#** Unity game where players can control a war tank with **brain waves**
- Integrated **Muse** technology to collect and communicate brain wave (EEG) data to the game over **TCP/UDP**

Education

Bachelor of Software Engineering — 2019 – 2024
University of Waterloo

- 96% Average, Term Dean's Honours List
- Waterloo Engineering Ambassador

Interests & Activities

Sports - Taekwondo, snowboarding, volleyball
Games - Video game design and development
Manufacturing - 3D CAD, metalworking, and machining
Professional Development - SHAD, DECA