William **Qin**

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Skills

Languages	Java, C/C++, C#, Python, JavaScript, HTML, CSS
Tech/APIs	Firebase, IoT, Arduino, Raspberry Pi, OpenCV, Amazon Web Services (AWS), Muse, Virtual Reality
Frameworks	Bootstrap, jQuery, Jekyll, Node.js
Tools	Unity, Git, Unix, Bash, 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 to program essential robot controls and **autonomous** driving mode in **Java**

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

- Developed a Windows application in **C#** 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%**
- Assembled over 1200 parts for manufacturing vehicle electronic equipment

Projects

Vision Motion | Android Application | THacks 2 — Oct. 2017 - present

- Launched a **motion tracking app** on the Google Play Store with over **1800** total installs and **400** active users, including university researchers and high school teachers and students
- Leveraged **real-time computer vision** with **OpenCV** on a phone camera to track the motion of an object and produce a line graph of its position, velocity and acceleration
- Implemented **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 and implemented the NXP Hovergames drone to **autonomously map heat sources** in an area
- Developed a heat data collection program in **C/C++** to integrate seamlessly with heat map creation and drone flight

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

- Created a customizable **sunrise alarm** with 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 could control a tank with **brain waves**
- Integrated **Muse** technology to collect and communicate brain wave (EEG) data to the game over TCP/UDP

Education

Candidate for Bachelor of Software Engineering | University of Waterloo — Sep. 2019 – Apr. 2024

- GPA 4.0/4.0, 96% Cumulative Average, Term Dean's Honours List, President's Scholarship of Distinction