William **Qin**

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Skills

Languages	Python, Java, Go, TypeScript, JavaScript, C#, C/C++, Rust, Scala, HTML, CSS
Tech/APIs	OpenCV, ARCore/ARKit, VR, Mixed Reality Toolkit, Arduino, Raspberry Pi
Web	React/React Native, AWS, Kubernetes, Terraform, MongoDB, Firebase, Node.js
Tools	Unity, Docker, Android Studio, Xcode, Visual Studio, VSCode, IntelliJ, Git, Bash, Unix, Ansible

Experience

Chassis Controls Firmware Intern | **Tesla** | Palo Alto, CA (Remote) Sep. 2021 – Dec. 2021

- Scoped, designed, and built a framework in **Python** to run custom tests on over **7500** different open loop simulations of vehicle firmware, discovering bugs in simulation code and significantly improving confidence in validation
- Integrated test framework with **Jenkins** and **SCons** to auto-run tests and ensure their continued use and maintenance
- Optimized generated **HTML** reports for reduced load times and better readability of simulation results
- Enhanced simulation with a modified interpolation search in **Rust** to implement new open loop playback functions

Full Stack Developer | **Spatial** | San Francisco, CA (Remote) Jan. 2021 – Apr. 2021

- Developed backend endpoints in **Go** with **MongoDB** to support new pro features, driving growth of paying users by **10x**
- Streamlined sharing and onboarding process in **TypeScript React** webapp to decrease user drop-off rate
- Added custom auth to allow guests without accounts to join rooms with a **27%** conversion rate from guests to sign ups
- Deployed **Fluentd** logging service to **AWS EC2** servers to reduce time to repair backend from **5 hours** to **30 minutes**
- Migrated web services to **Kubernetes** using **Terraform** and **Docker** for a declarative and more reliable infrastructure

Mobile Augmented Reality Developer | **Spatial** | San Francisco, CA (Remote) Apr. 2020 – Aug. 2020

- Ported the entire Spatial holographic meetings app to a **mobile iOS and Android AR app** to significantly expand meeting accessibility to users without AR/VR headsets, now making up **20%** of all active users
- Built a **TypeScript React Native** project on top of a **Redux**-style state system in **Unity C#** for a modular and native UI layer
- Designed and developed an intuitive mobile AR interaction system with Microsoft's **Mixed Reality Toolkit**

Lead Programmer | **Team 4308: Absolute Robotics** | Mississauga, ON Sep. 2017 – Jun. 2019

- Developed manual and **autonomous** driving modes in **Java** on a **CAN-bus** networked robot, leading the team to success as **world championship semi-finalists** in the 2018 FIRST Robotics Competition
- Iterated on a **web app** with **Firebase** to collect, display, and analyze data, informing match strategy and alliance selection

Projects

Vision Motion | Android Application Oct. 2017 – Jan. 2020

- Used real-time **OpenCV** computer vision to launch motion graphing app with **2270+** installs & **400+** peak active users
- 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 an **NXP microcontroller** drone with an infrared sensor and camera to autonomously map 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

Education

Bachelor of Software Engineering 2019 – 2024
University of Waterloo

- 97% Average, First in Class Scholarship (Fall 2020)

Interests & Activities

Snowboarding, taekwondo, volleyball, baking, crochet
Board games, video games, game design & development
3D CAD, woodworking, metalworking, and machining