

Kamran Tayyab

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Experience

Waterloo Hyperloop Team waterloop.ca

University of Waterloo, ON

SOFTWARE LEAD | C++/C

Sept. 2019 - Present

- Led and mentored 15+ undergraduate/graduate students in software sub-teams.
- Implemented CANOpen system to control Linear Induction Motors. github.com/waterloop/RoboteqCAN
- Integrated brake testing rig by building automatic brake system which triggered mechanical breaks within ~10ms.
- Implemented motor control system for Linear Induction Motors by outputting **PWM** signal to achieve maximum speed.
- Worked on implementing new Motor Control Unit (MCU) with Digital Interface techniques.

BreqLabs Inc. youtu.be/ta4fM9Cxm5A

Toronto, ON

SOFTWARE DEVELOPMENT INTERN | C#, JAVA

June 2018 - Sept. 2018

- Built **AR** product from scratch for engineers to explore and modify 3D CAD designs.
- Built **AR** applications for in-house hand tracking controllers.
- Implemented new **C#** platform for Engineers to showcase/modify 3D designs in Mixed Reality space for clients.
- Built Proof of concept **VR** swiftkey keyboard with in-house controllers.
- Decrease render speed time by 10% on encrypted peer to peer Android video chat application.
- Created application for other developers to integrate hand tracking controllers to their projects with detailed documentation.

Velto 3D Printing

Toronto, ON

DEVELOPER | ARDUINO, JAVASCRIPT

July. 2016 - Sept. 2017

- Worked with startups by helping design prototypes and find redundant functionalities.
- Helped stress test functional 3D prototypes in various environments.

Projects

Train μ

PYTHON3, FLASK, JAVASCRIPT

Feb. 2020

- Webapp allowing users to upload video of themselves playing sports and corrects their form
- Used data-set of pre-trained machine learning models to make new skeleton of user to compare with professional athlete
- Compared different movements of user vs. athlete to determine where user movement is lacking

JPEssentials

JAVA, ANDROID STUDIO

Sept. 2016

- High School mobile app that allowed users to view weekly timetable, course availability and map.
- Built for android with GCP to send post notifications and update timetables
- Deployed as official app for high school

Hackathons

3rd @ HackTheValley IV

Helps you get better at sports by building skeletons of your movements and comparing it to skeletons of professional athletes

StarterHacks

Mentored multiple student groups on programming basics for their first hackathon

GCP @ BrickHack V

Used **Python3**, **Google Cloud Platform** and **Flask** to output audio in new languages

2nd @ RU Hacks

Mobile app which trained *machine learning* models to detect buying habits and helps waste

2nd @ YorkU Hacks

Android app which used magnetometer sensor to detect changes in phone driving

Technical Skills

Proficient Arduino, C#, Java, Python3, C, JavaScript, Android Apps, Flask, AR/VR, 3D Printing
Environments Unity, Android Studio, Linux, Eclipse, Visual Studio/VS Code, Vim, Nano
Hardware Soldering, Oscilloscope, Digital Multimeter
Misc Git, Bitbucket

Education

Wilfrid Laurier University

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Waterloo, ON

Sept. 2017 - Present