

Kamran Tayyab

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Experience

Waterloo Hyperloop Team 🏆

EMBEDDED SOFTWARE LEAD | C++/C

University of Waterloo, ON

Sept. 2019 - Present

- Implement CANOpen system to control Linear Induction Motors github.com/waterloop/RoboteqCAN
- Implement new motor control system for Linear Induction Motors by outputting a **PWM** signal to achieve maximum speed
- Worked on implementing new Motor Control Unit (MCU) with Digital Interface techniques
- Integrate Inertial measurement unit (IMU) using **I2C** with Arduino to get a reliable orientation of the Goose V

BreqLabs Inc. 🎥

SOFTWARE DEVELOPMENT INTERN | C#, JAVA

Toronto, ON

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 🏆

DEVELOPER | ARDUINO, JAVASCRIPT

Toronto, ON

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 **Firebase** 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

Voiceflow for TOHacks 🏆

Used Voiceflow to make mobile app to asks user questions via audio

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, Android Apps, 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

Relevant Courses:

- Data Structures and Intro to Algorithms • Databases I • Object Oriented Programming