

WALEED AHMED

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SKILLS

C++ C Python JavaScript Java C# HTML CSS Assembly

ROS OpenCV Qt Node React Express MongoDB Flask

Git Linux QNX Perforce SVN Jenkins Docker LaTeX Jira

EXPERIENCE

Autonomous Vehicles Software Engineering Intern

Huawei

📅 Sep 2020 – Dec 2020

📍 Toronto, ON



- Developed a unit test suite for a Frenet frame motion planning stack with **90%** code coverage using **Google Test**
- Designed and implemented a path building library using **C++** to aid in construction of a wide variety of reference paths to test motion planning algorithms on

Automotive ADAS Software Engineering Intern

Qualcomm

📅 Jan 2020 – Apr 2020

📍 Toronto, ON



- Developed system and application software for an ADAS & autonomous driving platform in **C/C++**
- Accelerated performance of a **computer vision SDK** by an average of **20x** by leveraging available hardware and software architecture in automotive focused Snapdragon SoCs

Software Engineering Intern

Christie Digital

📅 May 2019 – Aug 2019

📍 Kitchener, ON



- Worked closely with QA and UI/UX designers for user interface development and maintenance to meet release deadlines across a wide variety of platforms using the **Qt** framework in **C++** and **QML**
- Significantly reduced the effort needed to maintain code health through software architecture redesign and setup of a continuous integration pipeline on a **Jenkins** build server that included unit tests with **90%** code coverage using **Google Test**

Video Software Engineering Intern

Synaptive Medical

📅 Sep 2018 – Dec 2018

📍 Toronto, ON



- Improved visibility of biological tissue during surgical procedures through color manipulation using **C++ (OpenCV)** and **C#**
- Post-processed image data in **Python** using **Pandas**, **Numpy**, and **Matplotlib** to analyze color manipulation

Industrial Imaging Software Engineering Intern

P&P Optica

📅 Jan 2018 – Apr 2018

📍 Waterloo, ON



- Developed a robust image acquisition framework for rapid line scan imaging of food on an industrial conveyor belt
- Implemented image correction algorithms and post-processing for industrial cameras in **Python** using **Numpy**, **OpenCV**, and **Matplotlib**

DESIGN TEAMS

Software Team Lead

UW Robotics



📅 Apr 2018 – Aug 2019

🌐 github.com/uwrobotics/RR2019

- Managed development for a robot that competed in the **International Autonomous Robot Racing Competition**
- Developed software architecture in **ROS** and **C++** for **perception**, **mapping**, and **path planning** using a stereo camera, IMU, and LiDAR sensor

PROJECTS

Synviz

UofTHacks VII (3rd place)

📅 Jan 2020

🌐 github.com/w29ahmed/Synviz



- Built an IoT device that could decode spoken text from facial input
- Developed a backend web server in **Python** using **Flask**, **Google Cloud Storage**, **OpenCV**, and **TensorFlow**

Bicycle Sensor

ECE 298 Course Project

📅 Dec 2019

🌐 github.com/w29ahmed/Bicycle-Sensor



- Designed hardware and software for an ultrasonic object detection module

Agilite

DeltaHacks V

📅 Jan 2019

🌐 github.com/w29ahmed/Agilite



- Built a **Python** backend using **OpenCV** and **TensorFlow** capable of recognizing handwritten text from an agile board

EDUCATION

B.ASc Computer Engineering,
Artificial Intelligence Option



University of Waterloo

📅 Sep 2017 - Apr 2022

- Udemy: Web Development Bootcamp
- Coursera: Self-Driving Cars Specialization
- Coursera: Machine Learning (Andrew Ng)
- Udemy: Computer Vision