Waleed **Ahmed**

wahmed.dev | w29ahmed@uwaterloo.ca | 647-708-7272 | waleed-a | w29ahmed

Skills

Languages: C++, C, Python, JavaScript, Java, C#, HTML, CSS, QML, Assembly
Libraries & Frameworks: ROS, OpenCV, Qt, Node, React, Express, Flask, Google Test, TensorFlow
Tools & Technologies: Git, Linux, QNX, Perforce, SVN, SQL, MongoDB, Jenkins, Docker, LaTeX, Jira

Experience

Zoox *Foster City, CA*
Incoming Software Engineering Intern *Sep 2021 – Dec 2021*
- SW HIL team, supporting integration testing and validation of a cutting edge AI software stack

Huawei *Toronto, ON*
Autonomous Vehicles Software Engineering Intern *Sep 2020 – Dec 2020*
- Developed a unit test suite for a Frenét frame motion planning stack with **90%** code coverage using **Google Test**
- Designed and implemented a path-building library using **C++** to construct a variety of reference paths to test planning algorithms on
- Used **C++** and **Matplotlib** to extract insights from vehicle trajectory data that helped expose flaws in motion planning algorithms

Qualcomm *Toronto, ON*
Automotive ADAS Software Engineering Intern *Jan 2020 – Apr 2020*
- Developed system and application software for an ADAS and 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

Christie Digital *Kitchener, ON*
Software Engineering Intern *May 2019 – Aug 2019*
- 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**

Synaptive Medical *Toronto, ON*
Video Software Engineering Intern *Sep 2018 – Dec 2018*
- Improved visibility of biological tissue during surgical procedures through color manipulation using **C++ (OpenCV)** and **C#**
- Enabled intuitive usage of a color manipulation algorithm through a web interface built with **JavaScript**, **HTML**, and **CSS**
- Post-processed image data in **Python** using **Pandas**, **Numpy**, and **Matplotlib** to analyze color manipulation

Projects

Autonomous Robot Racing *UW Robotics*
- 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

Synviz *UofTHacks VII (3rd place)*
- Built an IoT device using a **Raspberry Pi** that could decode spoken text from facial input
- Developed a backend web server in **Python** using **Flask**, **Google Cloud Storage**, **OpenCV**, and **TensorFlow**

Agilite *DeltaHacks V*
- Built an image processing pipeline in **Python** using **OpenCV** and **TensorFlow** capable of recognizing handwritten text from an agile board

Bicyle Sensor *ECE 298 Course Project*
- Designed hardware and software for an ultrasonic object detection module aimed at cyclists on the **MSP430** low power MCU platform

Education

University of Waterloo
B.ASc Computer Engineering, Option in Artificial Intelligence *Sep 2017 – Apr 2022*
- Udemy: Web Development Bootcamp, Computer Vision
- Coursera: Self-Driving Cars Specialization, Machine Learning