WALEED AHMED

w29ahmed@edu.uwaterloo.ca

4 647-708-7272

in linkedin.com/in/waleed-a

github.com/w29ahmed

SKILLS



EXPERIENCE

Automotive ADAS Software Engineering Intern Qualcomm



🛗 Jan 2020 - Present

Markham, ON

• Developing software features involving machine learning, cameras, graphics, and computer vision for an autonomous vehicles platform

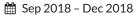
Software Engineering Intern Christie Digital



- 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



♥ Toronto, ON



- Improved visibility of biological tissue during surgical procedures through colour manipulation using **OpenCV** in **C++**
- Facilitated full control of camera settings through a .NET application that served as a frontend interface to a serial communication protocol
- Enabled intuitive usage of a colour 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 colour manipulation
- Used **C#** to integrate image processing algorithms with existing software architecture in a Windows environment

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 an industrial conveyor belt in the food industry
- Implemented image correction algorithms and post-processing for industrial cameras in Python using Numpy, OpenCV, and Matplotlib

DESIGN TEAMS

Path Planning Core Member WATonomous



Sep 2019 - Present

- Developing a simulation tool to efficiently test trajectory planning and costmap generation using MATLAB, C++ and ROS
- Contributing to software development for a level 4 autonomous vehicle competing in the SAE AutoDrive Challenge

Software Team Lead **UW Robotics**



math 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
- Implemented a lane detection algorithm capable of handling variable lane widths, curvature, and lighting conditions at a maximum of 25 Hz using OpenCV
- Introduced a new lightweight traffic light detection algorithm using OpenCV that reduced overhead and false positive rate

PROJECTS

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

University of Waterloo



₩ Sep 2017 - Apr 2022

Online Coursework

- Coursera: Machine Learning (Andrew Ng)
- Udemy: Machine Learning A-Z
- Udemy: Computer Vision