WALEED AHMED

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SKILLS



EXPERIENCE

Software Developer Christie Digital

CHKISTIE*

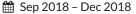
May 2019 - Aug 2019

♀ 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
- User interface and backend development for a high-profile application that will enable seamless and efficient control of up to 256 projectors to deliver a world-class visual experience at Expo 2020 in Dubai
- Refactored software architecture to be more modular and wrote extensive unit tests using Google Test for continuous integration purposes setup on a Jenkins build server, significantly reducing the effort needed to maintain code health for developers and QA

Video Software Developer

Synaptive Medical



♥ Toronto, ON



- Reverse engineered third party camera colour settings to improve visibility of biological tissue during surgical procedures
- Used **C#** for design and integration of image processing algorithms with existing software architecture in a Windows environment
- Post-processed image data in **Python** using data libraries such as **Pandas**. **Numpy**, and **Matplotlib** to analyze colour manipulation
- Utilized OpenCV in C++ to model and apply colour transformations
- Created a desktop application using the .**NET** framework to serve as a frontend interface for a serial communication protocol that allowed reading/writing of camera settings, enabling quicker debugging
- Built a web interface using **JavaScript**, **HTML**, and **CSS** for convenient and intuitive usage of a colour manipulation algorithm

Industrial Imaging Software Developer P&P Optica



🛗 Jan 2018 - Apr 2018

♥ Waterloo, ON

- Developed software for industrial imaging applications on **Linux** machines with **Git** version control in an **Agile** environment
- Implemented image correction algorithms and post-processing for industrial cameras in **Python** using **Numpy**, **OpenCV**, and **Matplotlib**
- Refactored data handling modules for efficient file input/output and wrote unit tests for them in Python using Pytest
- Restructured camera control modules in **C/C++** that use the Camera Link serial protocol to interface with the camera for control purposes
- Documented software design decisions and a troubleshooting guide to efficiently debug issues pertaining to image acquisition

ACTIVITIES

Software Team Lead **UW Robotics**



math Apr 2018 - Aug 2019

github.com/uwrobotics/RR2019

- Led the software team for a mobile racing robot and competed in the International Autonomous Robot Racing Competition
- Developed software architecture using a Linux based framework; ROS (Robot Operating System), for efficient package management and communication in C++
- Planned and managed development for an autonomous robot capable of perception, mapping, and path planning using a stereo camera, IMU, and lidar sensor
- Implemented a lane detection algorithm using OpenCV capable of handling variable lane widths, curvature, and lighting conditions at a maximum of 25 Hz
- Implemented a lightweight traffic light detection algorithm using OpenCV that reduced overhead and false positive rate in comparison to the previous method

PROJECTS

Agilite

DeltaHacks V





 Built a backend processing pipeline in Python using OpenCV and Tensorflow capable of extracting and recognizing handwritten text from an agile board

EDUCATION

B.ASc Computer Engineering University of Waterloo



Online Coursework

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

INTERESTS

Autonomous Vehicles Deep Learning
Computer Vision Gym Reading
Toronto Raptors Basketball