

WALEED AHMED

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EXPERIENCE

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**
- Refactored 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

Simulations Lab Assistant

University of Waterloo

📅 May 2017 – Aug 2017

📍 Waterloo, ON



- Simulated thermal management systems in **COMSOL Multiphysics** to be integrated with high power laser diodes in order to maximize device lifetime and performance
- Conducted literature review on state-of-the-art semiconductor devices and cooling techniques
- Wrote technical report on results and analysis of simulation data; accepted for publication as an **IEEE** conference paper

PROJECTS

Arduino Jukebox

github.com/w29ahmed/Arduino-JukeBox



- Programmed in **C++** to use analog input from a variable resistor to cycle through a list of songs displayed on a 16x2 LCD screen
- Songs are hard coded frequency patterns digitally sent to a piezoelectric speaker

Arduino Voltmeter

github.com/w29ahmed/Arduino-Voltmeter



- Programmed in **C++** to utilize a voltage divider circuit in order to read voltages up to 500 V ($\pm 1.4\%$ error) and display it on a 16x2 LCD screen

Toronto Raptors Image Classifier

github.com/w29ahmed/toronto-raptors-classifier



- Utilized transfer learning on Google's Inception v3 image classifier to identify players on the Toronto Raptors using **TensorFlow**, an open source **machine learning** framework in **Python**

Android Notes App

github.com/w29ahmed/Notes_App



- Simple but efficient note taking app for Android API levels 15 and above constructed using **Java**, **XML**, and a **SQLite Database**

SKILLS

Python C++ MATLAB Java
SQLite Git Linux
Microcontrollers
COMSOL Multiphysics

ACTIVITIES

Software Team Member

UW Robotics

📅 Apr 2018 – Current



- Working on software architecture using a **Linux** based framework: **ROS** (Robot Operating System), for efficient package management and communication between **machine vision** modules in **C++**

Marketing Director

NanoRobotics Group

📅 Oct 2016 – Apr 2018



- Responsible for in-team logistics such as funding allocation, business proposals, and delegation of administrative tasks to ensure functional team structure
- Acquired **\$4000+** in funding and sponsorships through pitching proposals

Orientation Leader

University of Waterloo

📅 Aug 2017 – Sept 2017



- Front-line leader responsible for directly interacting with new students and leading them throughout orientation week events

INTERESTS

Image Processing Machine Vision
Hyperspectral Imaging
Machine Learning Arduino
Software Development Self-learning
Basketball Toronto Raptors

EDUCATION

B.ASc Computer Engineering

University of Waterloo

📅 2017-2022

