Chad Paik

3A Mechatronics Engineering

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Summary of Qualifications

Programming Languages	Python, MATLAB, C, C++, LaTeX, HTML, CSS
Software/Tools	Solidworks, Android Studio, XCode, Keras, OS X, Windows, Linux
Embedded Systems	Arduino, Raspberry Pi, FPGA, Keil Board
Electrical Design	PCB Soldering, Breadboard Prototyping, Filter Design, Power Electronics, Cable Routing

Experience

Engineering Teaching Assistant
Waterloo, ON

University of Waterloo Engineering Department — *Sep-Dec 2017*

- Developed deep understanding in linear algebra, physics, and calculus to better respond to student inquiries
- Established excellent written skills through creating supplementary review packages for the students using LaTeX
- Honed oral communication and presentation skills through hosting extensive exam review sessions with over 200 students

Wireless Vehicular Technology Research Assistant
Waterloo, ON

Broad Band Communications Lab — *Jan-Apr 2017*

- Tested image packet data loss between source and transferred files based on difference in their image classification neural network outputs
- Performed data transfer such as text, images, and videos across different nodes in the same network to test latency
- Created a GUI Application using C++ with Visual Studio for link budget calculation

Junior Hardware Engineer
Mississauga, ON

Agfa Graphics — *May-Aug 2016*

- Implemented multiple modular hardware design changes in the industrial printing machines that reduced the total assembly time by 2 hours
- Assembled motor drives, relays, and transformers for testing of motors prior to their main installation
- Created a user-friendly electrical rig for testing proper grounding, allowing non-technical users to test the connection

Projects

UW Robotics Team: Robotic Manipulator Arm
Waterloo, ON

ROS Kinetic, C++ — *Jan 2017- PRESENT*

- Programmed robotic manipulator arm with 5 d.o.f. for Mars Rover using ROS Kinetic using C++
- Implemented closed loop control using input from inverse kinematic algorithm implemented using custom matrix library

Project Beowulf (Design Team)
Waterloo, ON

Exoskeleton, Machine Learning, Python, Sensors — *Jan 2016- PRESENT*

- Prototyped an exoskeletal glove controlled by Raspberry Pi for enhancing grip strength for Biomechatronics Design Team
- Programmed SVM, Softmax, and neural network using Python to predict hand position through EMG data from a MYO Armband
- Selected as top 100 projects to be competing in the final round of Hackaday Prize (https://hackaday.io/project/13993-beowulf)

Shoulder Rehabilitation Undergraduate Research Assistant
Waterloo, ON

Machine Learning, Python, Keras, HAR, Rehabilitation — *Dec 2017- PRESENT*

- Adopted Convolutional Neural Network with LSTM cells using Keras to perform human activity recognition
- Created an Android application to record the IMU data from the Android Wear using Android Studio

Education

University of Waterloo
Waterloo, ON

Candidate for Bachelor of Applied Science, Honours Mechatronics Engineering — *2015 - PRESENT*

- Ranked 7 out of 97 in 2A Term
- Cumulative GPA of 3.9