Vincent **Young**

University of Waterloo | Systems Design Engineering
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TECHNICAL SKILLS

- Designing and optimizing image processing algorithms written in MATLAB, Python
- Writing robust, efficient code using OOP fundamentals and iterative software development methods
- **Engineering Fundamentals:** Control theory, sensors, mathematical modeling, and analog/digital circuit design
- **Software Tools:** Python, C++, MATLAB, Jira, Git, Bash

PROFESSIONAL EXPERIENCE

Axon
May 2018 – August 2018
Embedded Engineer (Co-op)
- Owned the architecture, design, implementation, and integration of the core real-time GPS service in C++ for the upcoming Axon police body camera
- Conducted design reviews to solicit and incorporate feedback iteratively from product management, hardware, and embedded teams
- Integrated code with Yocto build system and deployed to Qualcomm SoC

Apple
January 2018 – April 2018
Display Image Processing Architect
- Developed and evaluated best-in-class image processing algorithms for image scaling, contrast enhancement, and colour management
- Collaborated with chip architecture and software teams to map algorithms into well-defined architectures implementable in software and hardware
- Prototyped and validated novel systems and algorithms in display pipeline through models in MATLAB, C++, Python

Synaptive Medical
January 2017 – September 2017
Systems/Mechanical Engineer (Co-op)
- Led team of engineers to bring robotic arm design and manufacturing in-house resulting in annual savings of over $600k
- Designed various components for Modus V robotic system using SolidWorks

Baylis Medical
January 2016 – April 2016
Research and Development Engineer (Co-op)
- Designed a program to control system hardware during in-vivo experiments
- Interpreted sensor data using statistical methods and demonstrated efficacy of early-stage medical device prototype

Vision and Image Processing Lab
September 2015 – December 2015
Research Assistant
- Improved MATLAB algorithms used for computer-aided prostate segmentation from MRI images by re-defining method for active contours
- Quantified improvement in performance between new and existing methods

RELEVANT PROJECTS

Oral Health Measurement and Analysis System
September 2017 – Present
- Developing algorithms to automatically analyze dental images for plaque levels and to identify regions in the mouth requiring targeted treatment
- Prototyping intraoral imaging hardware to ensure consistent data acquisition

Ultrasound Scanner
September 2017 – December 2017
- Designed a system to produce a 2D ultrasound image using two ultrasonic transducers, stepper motors, and an Arduino microcontroller

Wearable for Freezing of Gait Detection
September 2015 – December 2015
- Analyzed gait signals and coded algorithm in MATLAB to automate detection of the symptom in patients with Parkinson's
- Implemented and tested the solution in real-time using Arduino and IMU

EDUCATION

University of Waterloo
September 2014 – Present
- Candidate for BASc in Honours Biomedical Engineering (Cumulative GPA: 4.0)
- First in Class Engineering Scholarship, *2015 – 2018*

KAIST (Exchange Term)
September 2016 – December 2016
- Department of Bio and Brain Engineering
- Global Korea Scholarship (*$5000*), *2016*