KYLE JOSLING

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WORK EXPERIENCE

FPGA Engineering Intern | Christie Digital **May 2018 – Aug. 2019**

- Developed parts of high-speed image processing systems capable of processing 1.2 billion pixels every second that are used in cinemas and visual display systems worldwide
- Progressed through FPGA design flow including architecture, RTL coding, simulation and synthesis – created a design that allows engineers to communicate with FPGA chip without software, saving 100 hours of down time per design cycle
- Saved 8 hours of verification time per board by automating built-in self-tests for DDR SDRAM
- Completed board bring ups – debugged hardware and solved issues by collaborating with electrical and software engineers and by using oscilloscope and Xilinx Chipscope methods to produce fully functioning hardware

Software Developer Intern (Infrastructure) | London Hydro **May 2017 – Sept. 2017**

- Worked on a pilot project that aims to shift residential energy consumption patterns to off-peak times by implementing home automation systems and mobile applications and thereby reducing power grid load by 20%
- Contributed to development of a back-end system using AWS API Gateway, Lambda and DynamoDB to process real-time energy data for analytics and customer use
- Decreased system latency from 50 seconds to just 10 seconds by writing test scripts in Python and optimizing the system
- Acted as communications lead with hardware supplier by organizing and leading meetings, ensured congruency between project and supplier

RELEVANT EXPERIENCE

Autonomous Robotic Cucumber Harvester | Capstone Project **Sept. 2019 – Apr. 2020**

- Designed and built a robotic cucumber picker using a Kinova Mico robotic arm and depth camera, able to pick cucumbers with over 95% success rate
- Created a dataset of cucumber images and used it to train a neural network to perform real-time cucumber detection
- Used depth camera to find position of cucumbers, detect foliage, create an occupancy map, and plan paths around foliage
- Designed distributed software architecture using ROS, implemented design on multiple computers
- Designed and built a mechanical gantry that uses a stepper motor to pan the robot across a cucumber plant with accuracy within half of a millimetre

Western Engineering Robotic Design and Engineering Club **Sept. 2017 – Jul. 2018**

- Developed GPU-optimized computer vision algorithms as part of autonomous racecar team
- Designed embedded software architecture using ROS and implemented design on an Nvidia Jetson

Signtellect | Winner at Hack Western 4 **Nov. 2017**

- Used machine learning and a Leap Motion Controller to develop a web application that teaches users sign language

EDUCATION

B. Eng. Sc. Mechatronic Systems Engineering | University of Western Ontario **May 2020**

- Graduated with Distinction – 3.90/4.00 GPA
- Relevant coursework: Robotic Manipulators, Advanced Digital Image Processing, Advanced Control Systems, Kinetics and Dynamics of Machines

Machine Learning Course | Stanford University through Coursera **May 2020 – Jul. 2020**

- Topics: supervised learning (regression, neural networks, support vector machines), unsupervised learning (clustering, dimensionality reduction, deep learning) as well as best practices in machine learning

SKILLS

Software

C/C++, Python, Vim, OpenCV, Robot Operating System (ROS), Linux

Hardware

Verilog, Xilinx Vivado Design Suite, SolidWorks (CSWA certified), Autodesk EAGLE, soldering, oscilloscopes