Kyle Josling

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Education

Western University — London, Canada
Bachelor of Engineering Science in Mechatronics Systems Engineering, GPA: 3.9 — *September 2015 – April 2020*

Experience

Computer Engineering Intern – Christie Digital — May 2018 – September 2019
Verilog, C++, Python — *Kitchener, Canada*

- Developed image processing systems capable of processing 1.2 billion pixels every second, used in displays worldwide
- Progressed through FPGA design flow including architecture, RTL coding, simulation and synthesis
- Created a design that allows communication with FPGA chip without software, saving 20 hours of down time per design cycle
- Saved 8 hours of verification time per board by automating DDR SDRAM tests with Python
- Completed board bring ups – debugged hardware and software issues using oscilloscope and Xilinx chipscope methods to produce functioning hardware

Software Developer Intern – London Hydro — May 2017 – September 2017
Python, AWS — *London, Canada*

- Worked on pilot project to shift residents energy consumption patterns with IoT devices and a mobile app
- Built back-end system using AWS API Gateway, Lambda and DynamoDB to process energy data in real time
- Wrote test scripts in Python, decreased latency from 50 seconds to 10 seconds by optimizing the system
- Acted as communications lead with hardware supplier, organized and lead meetings

Projects

Capstone Project - Autonomous Cucumber Picker | *C++, ROS, Darknet*

- Designed and built a robotic cucumber picker using a robotic arm and depth camera, able to pick cucumbers with over 80% success rate
- Created dataset and trained neural network to perform real-time object detection and tracking
- Used depth camera to find location of cucumbers, create an occupancy map, and plan paths around foliage
- Designed distributed embedded software architecture, implemented design on multiple computers

Custom Wordclocks | *C++, Autodesk Eagle*

- Made custom wordclocks using LEDs and a driver
- Designed a PCB for LED driver in Eagle, including microcontroller and real time clock

Western Robotics Club - Autonomous Racecar Project | *C++, ROS, CUDA*

- Developed GPU-optimized perception and mapping 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 | *Python, Flask, scikit-learn*

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

Object Tracking Quadcopter | *C++*

- Used Raspberry Pi and Betaflight flight controller to follow objects

Technical Skills

Languages: C/C++, Python
Technologies: CUDA, ROS, Linux, Vim, Git, AWS
Libraries: OpenCV, NumPy, Darknet, Scikit-learn
Hardware: Verilog, Xilinx Suite, Autodesk Eagle, test instruments (oscilloscopes, DMMs, LCRs, JTAG), soldering