

Kyle Josling

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EDUCATION

Western University

Bachelor of Engineering Science in Mechatronics Systems Engineering, GPA: 3.9

London, Canada

September 2015 – April 2020

EXPERIENCE

Embedded Software Engineer – MDA Space

C++, Python, VHDL

Jan 2021 – Present

Vancouver, Canada

- Wrote embedded software for the Square Kilometre Array, the world's largest radio telescope
- Designed and implemented control systems for multiple signal processing chains within Stratix 10 SoCs, exceeding performance specs
- Implemented signal processing algorithms in a spectrometer to provide an accurate power spectrum for diagnostics
- Saved 20 hours per development cycle by writing tooling for unit testing and code generation
- Created new base software architecture that includes multi-threaded task management, state machines and logging utilities

FPGA Engineering Intern – Christie Digital

Verilog, C++, Python

May 2018 – September 2019

Kitchener, Canada

- Developed image processing systems capable of processing 1.2 billion pixels every second, used in displays worldwide
- Created an FPGA 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

Python, Node.js, AWS

May 2017 – September 2017

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
- 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 Wordlocks | *C++, Autodesk Eagle*

- Made custom wordlocks 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

Signtellelect - 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

TECHNICAL SKILLS

Languages: C++, C, MATLAB, Python

Technologies: Unix, Linux, CUDA, ROS, Git, AWS, Flask

Libraries: GoogleTest, PyTest, OpenCV, NumPy, Darknet, Scikit-learn

Hardware: Verilog, VHDL, Autodesk Eagle, test instruments (oscilloscopes, DMMs, LCRs, JTAG), soldering