SPENCER DELCORE

Computer Engineering - University of Waterloo

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QUALIFICATIONS

Languages	C++, Python, C, C#, VHDL/Verilog, MATLAB, PHP, JavaScript
Frameworks/Technologies	Azure IoT Edge, Qt, Git, Unity, AWS, SQL, Yocto, Buildroot
Embedded Experience	QNX, UNIX, Arduino, Raspberry Pi, Avnet MiniZed, Renasas R-Car-H3

WORK EXPERIENCE

Molex. - *Co-op Developer* Sept. 2018 - Dec. 2018
Waterloo, ON

· Responsible for evaluating QNX Hypervisor on an Intel NUC and Renasas R-Car-H3
· Built various Linux images using both Yocto and Buildroot, along with sample programs in C
· Developed an Edge Gateway for PROFINET enabled devices using Azure IoT Edge
· Designed a Human Machine Interface (HMI) connected to an OPC Server

Evertz Microsystems Ltd. - *Embedded Systems Design Engineering, Co-op* Sept. 2017 - Dec. 2017
Burlington, ON

· Developed a multi-threaded framework for generating embedded user interfaces using Qt and QML
· Implemented an embedded SQLite database, and configured it for performance
· Communicated through a defined protocol with various systems via D-Bus
· Parsed multiple JSON structures to generate various user interfaces

Cognitive Systems Corp. - *Augmented Reality (AR) Developer, Co-op* Jan. 2017 - April. 2017
Quantum Valley Investments, Waterloo, ON

· Responsible for creating an AR demonstration to visualize wireless signals using a Microsoft HoloLens
· Dynamically generated interactive holograms using Unity and C#
· Created a Python program that interfaces with Cognitive's system on a chip (SoC) to detect wireless signals
· Implemented websockets to communicate between the SoC and the HoloLens

Ingle International Inc. - *Software Engineering, Co-op* May. 2016 - Aug. 2016
Toronto, ON

· Accountable for building and maintaining version two of their API using PHP and the Laravel framework
· Built a dynamically themed Android application using Java and React Native
· Researched, presented, and participated in critical development meetings

VIZIYA - *Software Developer, Co-op* Sept. 2015 - Dec. 2015
Waterdown, ON

· Designed and developed quality ASP.NET and C# applications
· Preformed SQL queries to retrieve and manipulate data from Oracle and SAP databases
· Generated user guides, training manuals, and documentation

Emerging Star Investment Group - *Software Developer, Co-op* Jan. 2015 - April 2015
Accelerator Centre, Waterloo, ON

· Developed financial web-based software using PHP and the Laravel framework
· Created and maintained an Amazon Web Services (AWS) EC2 server to host the company website
· Built scripts to scrape and store financial related data using Python

PROJECTS

MIPS Processor - ***Verilog*** 2018

- Designed and implemented a cycle-accurate MIPS processor architecture in Verilog
- Constructed each stage of the 5-stage pipelined design using the synthesizable subset of verilog at the register-transfer level (RTL)
- Made use of testbenches and debugging strategies to ensure correctness and completeness

VHDL Compiler - ***Java, VHDL*** 2017

- Created a VHDL synthesizer and simulator using Java
- Uses VHDL (combinational circuits only) as the input language and produces circuit diagrams and simulations
- Gathered important compiler concepts such as regular languages, regex, DFA, lexing, recursive decent parsing, and context-free grammars

Room Sensors - ***C++, Python, Bash, JavaScript*** 2017

- Plots information stored in a database containing data from Arduino sensors
- Communicate and store sensor data from an Arduino to a Raspberry Pi using a created serial protocol
- Chart data from JSON reports received from a Raspberry Pi through websockets
- Created an install script that sets up the websocket, web page, cron job, Arduino, and MySQL database

DAC Audio Player - ***Altera FPGA, C*** 2016

- Implemented a 16-bit sampling stereo digital to analog audio player with push buttons to control playback
- Gained experience with Altera audio IP core, audio sampling and buffering, and interrupts
- Made use of the FatFS CLI to mount and interpret WAV files from a microSD card