Daniel **Hong**

Computer Science Student · Remote Software Developer

519-694-2175 | daniel.hong@live.com | dhong44 | dhong44

Skills

Languages Assembly, C, C++, Java, Ruby, Rails, Python, Haskell, JavaScript, React, HTML, CSS, Visual Basic, MatLab
Tools Linux, Bash, Git, Arduino, SQL

Work Experience

IBM — *Remote*

Remote Runtime Compiler Developer — *Sep. 2018 - Present*

- Primarily worked on the Z codegen team to improve code generation of Java on Z/architecture
- Reimplemented an improved long max/min evaluator which avoids using branches
- Deprecated register pairs on Z JVMs replacing them with 64 bit registers improving performance of all long evaluators and halving the number of register required

IBM — *Markham, Ontario*

Runtime Compiler Developer Co-op — *May. 2018 - Aug. 2018*

- Implemented new features and created bug fixes to improve Z/architecture code generation on Eclipse's Java VM, Openj9
- Created several benchmarks to measure the performance of commonly used Java functions on Z
- Improved synergy between various components of the JVM by redesigning compiler APIs to query other VM component features
- Vectorized intrinsic evaluators for String.indexOf() and String.toUpper/toLower to improve performance 30x
- Implemented peephole optimizations capturing over 14000 previously missed opportunities in a 10 minute benchmark

Western University — *London, Ontario*

Undergraduate Student Researcher — *May. 2016 - Aug. 2016*

- Setup Bluetooth based network Arduino nodes and a central Raspberry Pi to monitor sensor data in a room
- Incorporated temperature, humidity, light intensity data with outdoor temperature to create thermal comfort rating
- Created a web application to remotely monitor and collect data from the sensor network

Projects

Lisp Interpreter — *Jan. 2018 - Apr. 2018*

- Wrote a custom Lisp implementation supporting variables, functions and recursion written in C with custom libraries

Karnaugh Map Solver — *Aug. 2017 - Oct. 2017*

- Web application to visually display a truth table and Karnaugh map
- Implemented boolean algebra algorithm to calculate output of the truth table
- Supported Karnaugh maps with between 2 and 6 variables

Hack The North 'BykeSafe' — *Sep. 2016*

- Used a Pebble smartwatch to read cyclist hand signals and interpret the intended direction
- Setup server to receive data and provide notifications of the cyclist's intention

Education

Western University — *London, Ontario*

B.Sc. Computer Science & B.ESc. Mechanical Engineering — *Expected Apr. 2020*

- Western Scholarship of Distinction
- Dean's Honour Roll - 3.98/4.0 Cumulative GPA
- Relevant Coursework: Data Structures and Algorithms, Computer organization and architecture, Compilers, Databases, Discrete Math

Extracurricular Activity

WEBots - Western Robotics Club — *Sep. 2016 - Dec. 2016*

General Member

- Built and programmed an autonomous Arduino controlled walking robot
- Aided other team members in the design and programming of their own robots