Taylor Zowtuk

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Experience

JANUARY 2020 - CURRENT

Assistant Research Engineer, HUAWEI

- Conducted novel research on learning-based automatic generation of efficient tensor operations, in the compiler frameworks Halide and TVM using C++, Makefile, and Python
- Implemented Monte Carlo tree search, depth-first search, and improved model training resulting in 19x faster average tensor operator run time while decreasing search failures to 0
- Designed a flexible configuration file syntax and parser script, using YAML and Python, to enable quick specification of experiment parameters while being easily adapted to new projects
- Developed Python scripts to automate experiments and generate performance metrics, resulting in no system downtime and allowing for faster experimentation

DECEMBER 2018 – DECEMEBER 2019

Controls Team Lead, UA BIOMEDICAL TECHNOLOGIES DEVELOPMENT GROUP

- Built an embedded control system using Raspberry Pi, Arduinos, ROS, and Python for ALEX - an exoskeleton used to reduce the risk of high-load and repetitive strain injuries in the workplace
- Iterated on designs: first developing a simple single controller setup and extending it to become a more powerful and flexible multi-node system capable of responding to PID control
- Led an interfaculty team of 5 by guiding their work and coordinating with the other project leads to maintain the vision of the project

MAY 2019 – AUGUST 2019

Research Assistant, UNIVERSITY OF ALBERTA

- Converted from MIPS to RISC-V assembly, a terminal-based graphics library, used to assist students in learning computer architecture concepts and assembly programming
- Identified and successfully resolved a project blocking bug by implementing Unicode UTF-8 support for an open-source RISC-V simulator while working with an unfamiliar language

Education

SEPTEMBER 2018 – APRIL 2021 (GRADUATED)

BSc Computing Science Specialization in Software Practice, UNIVERSITY OF ALBERTA

- Final cumulative GPA of **3.955**/4.0
- **Gazprea Compiler:** Developed type system for a compiler of a statically typed language in C++
- **Measure What Matters:** Developed the front end for a progressive web app used for the live recording of soccer game statistics and post-game visualization; written in Typescript and React

SEPTEMBER 2013 – APRIL 2018 (GRADUATED)

BSc General Biological Sciences Major, UNIVERSITY OF ALBERTA

Skills

- Technical: Python, C/C++, Java, SQL, Assembly, Lisp, Prolog, R, TypeScript, React, Git, Linux
- Hard: algorithms, debugging, parallelism, documentation writing
- Soft: problem solving, communication, time management, organization