

## 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 search algorithms which better explored the space of possible optimizations, resulting in 19x faster average tensor operator run time while also eliminating search failures
- Implemented early stopping and improved our deep neural network architecture in TensorFlow, preventing model overfitting and resulting in improved model training and inference
- 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
- Championed use of static analysis tools by deploying SonarQube and using it to help identify and resolve critical bugs while also providing my team with actionable ways to reduce technical debt

DECEMBER 2018 – DECEMBER 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
- 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
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## 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 the type system, in C++, and co-designed the abstract syntax tree for a compiler of a statically typed language which targeted LLVM IR
- **Vibes:** Developed the mood adding/editing screens and implemented unit/system tests for an easy-to-use Android application used for posting, tracking, and sharing a user's moods
- **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

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## Technologies

### Languages

Python, C / C++, Java, TypeScript, Assembly, SQL

### Libraries

React, TensorFlow

### Tools

Git, Makefile, Linux