

## Languages and Tools

**Proficient:** C++, Python, Git, Linux, Vim, Bash Script, SQL

**Also good at:** C, JavaScript, Java, Flask, Android Studio

**Have worked with:** LLVM, OpenMP, C#, Scala, Spark, Node.js, Haskell

## Experience

### IBM - C/C++ Compiler Developer Intern

*Sep 2022-Dec 2022/Markham, ON Canada*

- Developed a C/C++ compiler optimized for IBM zSystems and IBM Power. This involved working with C++, Clang/LLVM, Opt tool, LLVM IR, Bash Script, and Git. I also worked with Linux, AIX, and z/OS.
- Ran SPEC benchmarks and evaluated compiler performance by comparing the percentage differences in run time and the numbers in statistics.
- Worked on some loop optimizations and mainly with ISS, an optimization that could remove branches in loops by splitting the ranges.
- Helped develop an internal Git Bisect tool and presented it to a compiler educational session. Most teams adopted the tool and it saved their time spent on manual debugging significantly.

### University of Victoria - Teaching Assistant

*Jan 2022-Apr 2022/Victoria, BC Canada*

- Helped first and second year students with Algorithm and Data Structures courses, Programming courses (C, C++, Python, Java), Web Development course, and Computer Architecture course.
- Guided and assisted students in understanding theories, programming, debugging, and problem solving.

### BlackBerry - Open Source Developer Intern

*Sep 2021-Dec 2021/Mississauga, ON Canada*

- Made sure the company was compliant with open source licences. Enabled analysts to do compliance scans by developing tools, scripts, and expanding capability of the existing tools mainly with Python and PostgreSQL.
- Optimized source code to reduce the execution time from approximately 10 hours to a few hours by using dynamic programming and multithreading.
- Designed and implemented database schema for analysts to verify their results. Also automated their tasks by writing a script to fill out information from the database, which reduced the amount of files analysts have to look at from several thousands to a few dozens.

### Helm Operations - Full Stack Software Developer Intern

*Jan 2020-Aug 2020/Victoria, BC Canada*

- Implemented new product features that increased productivity of members of work boat companies and fixed bugs in the production code. Mainly used JavaScript, Knockout.js, HTML/CSS.
- Created APIs and API tests by using .NET with SQL Server database and JavaScript.
- Created end-to-end tests for new features and APIs using Puppeteer which helped reduce QAs' workload.

## Education

### Bachelor of Computer Science - Honours

*8.16/9 GPA*

- Graduated in May, 2023. University of Victoria.

### Relevant Courses

- Compiler Construction, Algorithms and Data Structures, Advanced Programming in C++, Operating System, Programming Languages, Parallel Computing, Database Systems, Computer Networking, Massive Datasets, Data Mining, Quantum Computing, Randomized Algorithms, Music Information Retrieval

### Activities

- President of the UVic Competitive Programming Club (Jan 2021 - Sep 2022)
- Took part in the ICPC (International Collegiate Programming Contest) in 2019, 2020, 2021, and 2022.
- Currently ranked **#1** on UVic open.kattis.com, a competitive programming platform
- Honours research project: By using the data from StackOverflow, the goal is to use data mining and machine learning to identify patterns of adoption and uses of programming languages