Matthew T. **Mullen**

Software Engineer

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Education

University of Alberta *Edmonton, Alberta, Canada*

Bachelor of Science Specialization in Computer Science *Sep. 2018 - May 2022*

- 3.3/4.0 GPA

Skills

Programming Languages Proficient with Python, C++/C. Experience with Java, RARS, LaTeX, Git, and Linux
Fluent English, Beginner Vietnamese

Experience

Citi *Mississauga, Ontario, Canada*

Software Engineering Intern *May 2021 - August 2021*

- Global Spread Products Team
- Responsibilities include: building Continuous Integration / Continuous Deployment Automation framework to support trading applications, building Microsoft Outlook plugin to automate the process of sending followup emails and tracking responses, building a smart portfolio management application, as well as providing consultative, architectural, and engineering support for the application team.
- Technologies : Java, Python, C Sharp, SQL, Bash, Linux, JavaScript

Projects

File / Directory Monitor *Edmonton, Alberta, Canada*

Personal Project *February 2021 - March 2021*

- Designed and implemented a multithreaded client / server application that monitors any kind of file/directory change, creation or deletion in C.
- Observer client monitors file/directory for changes, sends those changes in a serialized format to the server, and then using concurrency control methods, the server periodically reads and deserializes the most recent data for each Observer client from a custom data structure and sends to the User client for display.

Working Set Simulator *Edmonton, Alberta, Canada*

Personal Project *March 2021*

- Designed and implemented a working set simulator that scans the output of Valgrind to determine the number of unique pages being accessed within a given time interval throughout the duration of a process in C.
- Utilizes a seperate chaining hashtable to represent the working set and outputs data to gnuplot for analysis.

Crowd Sourced Experiment Trial Application *Edmonton, Alberta, Canada*

Personal Project *January 2021 - April 2021*

- Designed and implemented an Android application in Java that allows user's to create, upload, modify, produce results for, and publish experiments to a database.
- User's are able to browse and participate in their own experiments, along with other experimenter's experiments.

Signal Handler *Edmonton, Alberta, Canada*

Personal Project *January 2021 - February 2021*

- Designed and implemented a signal handler in C to scan the entire address space of a process to determine read/write permissions for any given page.

Hollow Heap Implementation *Edmonton, Alberta, Canada*

Personal Project *November 2020*

- Implemented a Hollow Heap based off of a research paper in C.
- Benefits of Hollow Heap implementation include constant time insert, find min, and reduce key operations.