# ALAN LIU

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## SUMMARY OF QUALIFICATIONS

- Languages: C++, Python, Java, C#, C, Scala, Bash, Racket
- Tools: Azure DevOps, Git, Hadoop, Jira, MySQL, PyTorch, Spark, Visual Studio Code
- Select Courseworks: Database Management, Distributed Systems, Optimization, Machine Learning

## EDUCATION

**University of Waterloo**, *Waterloo, ON* Sept. 2018 - Current

Candidate for Bachelor of Computer Science, Co-operative Program; Faculty Average 95.5%

## EMPLOYMENT

**Amazon**, Software Dev Engineer Intern, *Vancouver, BC* Starting May 2022 - Ending Aug. 2022

**Thomson Reuters**, Software Developer Intern, *Toronto, ON* Sept. 2021 - Dec. 2021

- Improved platform tool written in C# by adding support to install SQL stored procedure on user-specified server and used Mediator design pattern for unit testability
- Implemented unmanaged resource cleanup method for classes and traced through backend logic to cleanup unmanaged resources accordingly

**Paramount Commerce**, Java Developer, *Toronto, ON* Jan. 2021 - Apr. 2021

- Developed features to support new merchants and performed bug fixes in the backend written in Java 8
- Refactored existing test suites to adopt Page Object pattern to improve maintainability and to enable mobile support through Appium

**Huawei Technologies**, Junior Software Engineer, *Markham, ON* May 2020 - Aug. 2020

- Extended the SPIRV dialect in MLIR, an open source compiler framework written in C++, by implementing various SPIRV data types and instructions for a proof of concept frontend for Huawei's compiler
- Prototyped a basic conversion path from SPIRV dialect to LLVM IR dialect in MLIR to achieve end to end compilation with MLIR as the front end
- Wrote Python and Bash scripts to run and collect test results for end to end compilation through MLIR

**Imagine Communication**, QA Developer, *Waterloo, ON* Sept. 2019 - Dec. 2019

- Designed and implemented end-to-end flow for testing play-out of growing video clips using Python
- Decreased the duration of static play-out test suite by 50% through optimizing channel configuration processes

## PROJECTS

**Sorcery | C++** July 2019

- Designed and implemented a strategy card game with command line I/O and graphic display using MVC design pattern
- Implemented the board and abstract card classes with decorator and strategy design patterns to allow cards with various abilities to be easily added into the game
- Utilized the visitor design pattern to encapsulate the logic of deploying different card types in the board class so that new card types can be easily added into the game

**Sudoku Solver | C** Apr. 2019

- Designed and implemented an efficient backtracking Sudoku solver

## AWARDS

**Governor General's Bronze Academic Medal**, *Governor General of Canada* Dec. 2018

- Awarded for having the highest grade point average from a Canadian high school