# First Last

myemail@gmail.com • +8 (888) 888-8888 • gh-username • website.url • li-username

## Education

- **University of Waterloo** *Sep 2021 – Apr 2025 (Anticipated)*
  *Honours Bachelor of Computer Science; cGPA: 95.10%*
  - **Coursework**: Operating Systems, Algorithms, Data Structures, Databases, Object Oriented Programming, Statistics, Linear Algebra, Combinatorics
  - **Scholarships**: Faculty of Mathematics Scholarship, President's Scholarship of Distinction

## Skills

- **Languages**: C, C++, Python, Java, Scala, Bash, Rust, JavaScript, TypeScript
- **Tools/Platforms**: Linux, Docker, Nginx, DPDK, Django, Flask, Node, Express, Google Cloud Platform

## Experience

- **Huawei – Software Engineering Intern (Computer Networks)** *May 2023 – Aug 2023*
  *Engineering protocols and libraries for high-performance, low-latency networks (C, DPDK)*
  - Created library using Dataplane Development Kit (DPDK) to process UDP packets, with up to 18x speed improvement over Linux kernel sockets
  - Collaborated to design a UDP-based connectionless and reliable transport layer protocol
  - Designed and implemented library for the protocol in C, employing lock-free data structures and message passing to achieve processing of 150+ concurrent connections on a single machine
  - Developed logging software to track and troubleshoot performance with minimal (<<1%) impact on runtime
  - Used tools such as gprof, gdb, and dpdk-pdump to resolve complex performance, networking, and concurrency issues
- **AMD – Software Engineering Intern** *May 2022 – Aug 2022*
  *Developed and maintained debugger for 200+ Kernel-Mode Driver developers across AMD (C++, Python)*
  - Added feature to inspect hardware scheduled queues, enabling debugging of critical launch-gating issues
  - Proposed and implemented improvements used across unit (GTest, GMock) and CI test infrastructure, reducing test code size by up to 50%
  - Automated formatting of tables, nested lists, and dictionaries, ensuring consistent output and deduplication of code
- **WePlate – Backend Engineer** *Jan 2022 – Jun 2022*
  *Designed, developed, and deployed backend system for nutritional insights (Python, Django)*
  - Processed and served 10,000+ cafeteria scheduling and nutritional items using Django REST Framework
  - Implemented Simulated Annealing algorithm to autogenerate portion sizes optimized for nutritional value
  - Deployed project as scalable webservice using GCP AppEngine and CloudSQL

## Awards/Competitions

- **ICPC ECNA Regionals**: Represented Waterloo in 2021 and 2022, placing 4th and 6th against 90+ other university teams
- **Putnam 2021**: Placed in the top 500 of the most famous University-level mathematics competition
- **USACO Open 2021 (Platinum)**: 32nd of pre-college contestants in the highest division of the USA computing olympiad
- **Google Code Jam 2021**: 3rd of Canadian contestants in international algorithms competition with 90,000+ contestants
- **CCC & CCO 2021**: 1st out of 2,900+ contestants at Canada's most prestigious high school programming contest (CCC), qualifying for the CCO (top ∼40 CCC) and achieving a silver medal

## Projects

- **C++ Game Engine**: Designed and implemented object-oriented (OOP) game engine built around the MVC pattern. The engine supports handling a variety of entities with built in entity movement, collision detection, and a graphics library
- **Competitive Programming Tools**: Tools that greatly speed up implementation and debugging during programming contests. Includes automated local testing, stress testing, and browser integration. Available as a Python CLI or VSCode extension (TypeScript and React.JS)
- **LACS Compiler**: Scala-based compiler for functional language targeting MIPS. Includes support for closures, nested functions, static typing, garbage collection, and tail-call optimization
- **Minecraft Server Plugins**: Used Java, Kotlin, and the Spigot API to add features such as KitPVP mechanics, custom bosses, and hats