First Last

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Education

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

Skills

- **Languages/Tools**: C, C++, Python, Java, Rust, Scala, JS/TS, Bash, DPDK, Docker, Nginx, Django, Flask, Node, Express
- **Techniques**: OOP, Data Structures, Algorithms, Concurrency, Computer Networks, Databases
- **Platforms**: Windows, Linux, Google Cloud Platform

Experience

- **Huawei – Network Engineering Intern** *May 2023 – Present*
  Engineering protocols and libraries for high-throughput, low-latency networks (C, DPDK)
  - Creating a UDP socket library on top of DPDK, with up to 18x speed improvement over Linux kernel sockets
  - Building a transport-layer protocol that supports remote direct memory access (RDMA) over a simple interface
  - Implementing a reliability layer that ensures data integrity over UDP connections
  - Creating benchmarking software to track performance across different components and network conditions
- **AMD – Software Engineering Intern** *May 2022 – Aug 2022*
  Developed and maintained driver debugger for 200+ KMD 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 debugger output and deduplication of formatting code
- **WePlate – Backend Engineer** *Jan 2022 – June 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
- **Google Code Jam 2021**: Placed 3rd of Canadian contestants in third round of international algorithms competition with 90,000+ participants
- **CCC & CCO 2021**: Placed 1st out of 2,900+ participants 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