Moses Xu

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plasmatic1

Skills

- **Languages**: Python, C/C++, HTML/CSS/JavaScript, Node.JS, TypeScript, Java, Kotlin, Scala, Haskell
- **Tools/Frameworks**: Django, Flask, Express, Make, GDB, Valgrind, Docker, Nginx, React, Vue, Git
- **Platforms**: Windows, Linux, Google Cloud Platform

Education

- **University of Waterloo** — Waterloo, ON
  Candidate For Honours Bachelor of Computer Science; Major Average: 99.75% — *Sep 2021 – Present*
  - **Coursework**: Object Oriented Programming (Adv) (100%), Foundations of Sequential Programs (Adv) (99%), Data Structures (Adv), Statistics (Adv), Combinatorics (Adv) (98%)
  - **Scholarships**: $8,000 Faculty of Mathematics scholarship, $2,000 President's Scholarship of Distinction

Experience

- **AMD – Software Engineering Intern** — Remote
  Worked on debugging tool for 200+ KMD developers across the development cycle (C++, Python) — *May 2022 – Aug 2022*
  - 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 development time and increasing accuracy.
  - Implemented overhaul of extension UI library, creating consistency in the output format and removing the need for manual formatting
- **Programming Contest Organizer & Author** — Remote
  Organized contests, created algorithms problems and prepared tests and graders — *Sep 2019 – Present*
  - **Codeforces LATOKEN Round 1**: Algorithms contest with 18,000+ participants sponsored by LATOKEN. Contest preparation done with C++
  - **DMOJ Contests**: Organized contests with hundreds of participants
- **WePlate – Backend Engineer** — Remote
  Designed, developed, and deployed (Python & Django) backend system for nutritional insights — *Jan 2022 – June 2022*
  - Created a Simulated Annealing algorithm to generate optimized portion sizes
  - Processed and served mass amounts of cafeteria scheduling and nutritional data (10,000+ items)
  - Deployed and updated scalable Django webservice using GCP AppEngine and CloudSQL

Awards/Competitions

- **ICPC ECNA Regionals 2021**: Placed 4th at the 2021 ECNA contest as part of top team Waterloo Black
- **Google Code Jam 2021**: Major algorithms competition with 90,000+ participants
  - Placed 3rd of Canadian participants in Round 3 (165th overall)
- **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 participants in 2021) and achieving a silver medal

Projects

- **Competitive Programming Tools**: A suite of tools that greatly speed up implementation and debugging during programming contests, includes automated local testing, stress testing tools, and browser intrgration. Available as a Python CLI tool or as a VSCode extension with a convenient UI (written with TypeScript and React.JS)
- **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
- **LACS Compiler**: Scala program that compiles a simple functional programming language for the MIPS architecture. Includes support for closures and nested functions, automatic garbage collection, and tail-call optimization
- **Personal Webserver**: Webservices managed with Docker and Nginx. Services include a personalized badge generator for online judges and a 1,400+ solution database for the DMOJ. Technologies used include Django, TypeScript, and Express
- **Minecraft Server Plugins**: Created plugins using Java, Kotlin, and the Spigot API which add new commands and features, such as KitPVP mechanics and UI, custom bosses, and hats.