

ERIC WANG

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SUMMARY OF QUALIFICATIONS

- **Technical:** Rust, C++, Haskell, OCaml, Python, Java, Bash, Lean, ~~TeX~~, Typst
- **Tools/Frameworks:** Git, GoogleTest, Qt, CMake, Make, Pyro, Linux, Nix

EXPERIENCE

Compiler Engineer

HuaweiTechnologies

Markham, ON

Sep. – Dec. 2024

Undergraduate Research Fellowship – Programming Languages

University of Waterloo

Waterloo, ON

Jan. – Apr. 2024

- Co-authored *Compiling Probabilistic Programs for Variable Elimination with Information Flow* [🔗](#), PLDI 2024
- Wrote two transpiler backends for the MAPPL language targeting Pyro and Rust
- Benchmarked the MAPPL compiler on inference problems including HMMs, Soft- k -means, and LLM tasks

Software Engineer – Projection Mapping

Christie Digital Systems

Kitchener, ON

May – Aug. 2023

- Used CMake to streamline cross-platform development of a C++/CUDA rendering application
- Implemented a data-filtering heuristic to improve camera-projector pixel mappings during location calibration
- Investigated and documented research on stereo vision tasks in complex 3D setups using real hardware

Instructional Support Assistant – CS246

University of Waterloo

Waterloo, ON

Sep. – Dec. 2022

- Administered a course in C++ and object-oriented software development to over 400 students
- Coordinated a team of 15 to mark assignments/projects in a timely manner
- Refactored 2000 line Bash script for compiling grades down to 300 lines

PROJECTS

CS444 [🔗](#) | Rust

Jan. – Apr. 2024

- Built a compiler for a large subset of Java targeting i386, received grade of 100
- Supports OOP via class dispatch vectors and interface dispatch vectors
- Implements register allocation via graph colouring and ISel via tiling with dynamic programming
- Performs string interning, tail-call optimization, and constant folding
- Designed a cargo test harness to verify each phase of the compiler on a suite of over 1000 tests

Advent of Code [🔗](#) | Haskell, megaparsec

Apr. – Sep. 2023

- Self-studied functional programming and parser combinators

Patternmon [🔗](#) | C++

Oct. – Dec. 2022

- Programmed a command line Pokémon simulator as an ISA for CS246
- Utilized design patterns including decorator, visitor, and PIMPL to supplement student learning

Constructor [🔗](#) | C++

Aug. 2022

- Wrote a Settlers of Catan simulator for CS246 final group project
- Embraced SOLID principles to support modular code, received grade of 103

EDUCATION

University of Waterloo

Candidate for Bachelor's degree, Computer Science

Waterloo, ON

Sep. 2021 – Expected Apr. 2026

- 96% cumulative average
- Recipient of \$24,000 Fairfax Financial Entrance Award
- Working towards minors in pure mathematics, combinatorics and optimization