Edward Wu

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Education

University of Toronto **September 2022 – April 2026**
Bachelor of Applied Science in Computer Engineering + PEY Co-op *Toronto, ON*

- **90.6%** Cumulative Average, **3.88/4.0** GPA
- Awarded Dean's Honours List in all Academic Terms

Relevant Coursework

- Digital Systems
- Computer Organization
- Applied Fundamentals of Deep Learning
- Digital Electronics (Planned)
- Computer Hardware (Planned)
- Intro to Control Systems (Planned)

Experience

Undergraduate Research Intern **May 2024 – August 2024**
University of Toronto *Toronto, ON*

- Conducted a research project to improve the performance of mesh decimation with relaxed priority scheduling, under the supervision of Professor Mark C. Jeffrey.
- Ported Win32 parallel code to modern **C++** with std::atomic and std::mutex for cross-platform compatibility
- Implemented benchmark test scripts in **C++** to analyze bottlenecks from parallelism and verify algorithmic performance

Software Developer **September 2022 – August 2023**
SPARK Design Club, University of Toronto *Toronto, ON*

- Programmed game logic for a pattern memorization game on an Arduino microcontroller using **C++**
- Developed a bit masking algorithm to increase memory efficiency of game logic code by an average of **77%**
- Collaborated with a sub-team of 3 within a 20+ member team, utilizing **Git**, **GitHub**, and Notion

Projects

uniVerse | *C++, OpenStreetMap, GTK* **January 2024 – April 2024**

- Developed a OpenStreetMap-based mapping software to visualize streets, points of interest, and geographical features of major cities in **C++**
- Implemented **A* pathfinding** across streets and common public transportation routes for both driving and commuting navigation
- Adapted the Travelling Salesman Problem to the mapping software and implemented optimization techniques for greater performance,. placed 16th in a class of 80+ groups

SequenceMemory | *Verilog, Intel Quartus Prime, ModelSim* **December 2023**

- Created a Sequence Memory game on a **DE1-SoC FPGA** in **Verilog**
- Implemented game logic using finite state machines and data paths, including pseudo-random level generation, input validation, and LED animation management
- Debugged and troubleshot Verilog code using custom **ModelSim** test benches and .do files
- Integrated I/O peripherals including VGA display, PS2 keyboard, and audio as components to the game

Competitive Programming | *C++, Java, Python* **January 2021 – Present**

- Developed a repository containing over 100+ solutions to problems from competitive programming platforms like dmoj.ca, codeforces.com, and atcoder.jp
- Applied advanced data structures such as segment trees and fenwick trees, and algorithms such as dynamic programming and graph theory, to efficiently solve problems within time and memory constraints
- Analyzed problem statements to identify and implement optimal data structures and algorithms under competitive conditions

Technical Skills

Languages: C/C++, Verilog/VHDL, Bash, Python, Java
Development Tools: Intel Quartus Prime, ModelSim, Linux, Git, SPICE, MATLAB