Maya Warrier

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Education/Skills

University of Toronto, St. George Campus **Expected Graduation May 2024**

BASc. Computer Engineering

Standardized Test Scores: SAT: 2130/2400 (eq. to 1510 on new SAT), SAT Math Level II: 800/800

Relevant coursework: Operating Systems, Computer Graphics, Computer Hardware, Programming Languages, Data Structures and Algorithms, Artificial Intelligence Fundamentals, Probability and Applications, Probabilistic Reasoning

Programming Languages: C++, C#, Python, Java, C, ANSI C, Javascript, Verilog, GLSL/HLSL

Libraries: PyTorch, TensorFlow, .NET, WPF, devDept Eyeshot, Unity, Boost, GTK, OpenGL

Environments: Desktop Development, Machine Learning, Game Development

Relevant Work Experience

Software Developer Co-Op at Rocscience Inc (Toronto, ON) May 2020 – Sep 2021

- Helped create the core library for Rocscience's then upcoming line of 2D CAD products with a team of 3
  - Ported the object snap feature from the legacy C codebase into C#
  - Developed the new state-based Undo/Redo system
- Developed a reflection-based JSON serialization library to automatically generate serialization code
- Improved communication between application and compute engine, reducing unnecessary re-computation and improving performance

Software Engineer Intern at Rocscience Inc (Toronto, ON) May 2019 – Aug 2019

- Developed 3D contouring and visualization tools for Rocscience's Examine3 product
- Migrated the legacy graphing system to Examine3 and refactored it for easier porting to future products
- Designed the foundation of Examine3's field point contouring, visualization, and graphing tools

Research Assistant at Dept. of Civil Engineering, UofT (Toronto, ON) Dec 2017 – Jan 2019

- Co-developed "city-builder", a cross-platform 3D tool to help civil engineers and urban planners design cities
- Developed a JSON-based file format to describe cities, roads, and lanes
- Created an API and UI tool to create lanes and roads and customize their sizes, types, signage, etc.
- Worked with PhD candidates with regular meetings under the direction of Dr. Tamer Diraby

Leadership Experiences

Competition Director at UofT Engineering Kompetition (UTEK) 2020 Sep 2019 – Mar 2020

- Conceptualized and created the programming challenge and hosted the programming event on the day, conducting a promotional bootcamp during its leadup and coordinating with industry judges to aid with scoring
- Worked with other UTEK directors under the supervision of Ontario Engineering Competition (OEC) and FECC
- Achieved the largest turnout for the programming event in over five years

Entrepreneurship Hatchery Startup Incubator May 2018 – Aug 2018

- Co-founded Team Pulse, a networking-focused events platform through UofT's Entrepreneurship Hatchery
- Took lead of presenting and pitching product at biweekly investor meetings comprised of prominent VCs
- Collaborated with industry mentors and on-campus groups, gaining endorsement from 3 large campus groups

Personal Projects and Open-Source Contributions

fast_float github.com/fastfloat/fast_float

- Made major contributions to fast_float, a high-performance number parsing library that is part of GCC 12, LLVM (clang, Rust), and WebKit (browser engine behind Safari and Chrome)
  - Improved performance by 10% for Unicode (UTF-16) strings using SIMD
  - Reviewed and made bug fixes to the PR that added support for Unicode strings

si-json github.com/mayawarrier/si-json

- Header-only templated JSON library for C++11 and later, with support for custom allocators and fancy pointers
- Aims to balance performance and ease-of-use with an API that is simpler than other libraries like rapidjson
- Features a custom string type with performance improvements over standard library (up to 25% on Windows)

intel8080-emulator github.com/mayawarrier/intel8080-emulator

- An Intel8080 emulator and testing tool. The 8080 was one of the earliest 8-bit microprocessors.
  - Emulates a CP/M 2.2 terminal and parts of the CP/M operating system and BIOS
  - Core library is C90-compatible, freestanding, and can also run without a std library

Miscellaneous

Dean's Honour List in Fall 2017, Fall 2022. Member of UTRA Robotics club, invited to be director. Wrote article for Cannon newspaper on the intern experience. Led a team of 9 developers to create demo for a potential sci-fi game "905"