MICHAEL XU

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EXPERIENCE

Intel – Graphics Validation Intern
May 2023 – August 2024

- Developed and synchronized multi-GPU memory qualification scripts for data center GPUs using Python and Bash, automating power-cycling, workload execution, and logging across multiple server racks.
- Improved the 2D voltage/phase sweep algorithm in GPU memory subsystem interface by caching intermediate results and optimizing navigation, reducing execution time by 70%.
- Created a scoring method for voltage/phase sweep characterization, eliminating manual checks and enabling automation in memory subsystem tuning.
- Designed a C# Windows Forms application to streamline GPU firmware editing process, reducing modification time by 90%.

Schneider Electric – SCADA Engineering Intern
May 2022 – August 2022

- Developed a C++ Windows Forms application for real-time Programmable Logic Controllers (PLC) data visualization, incorporating multi-source tracking and automating threshold breach alarms.
- Designed an intuitive user interface, simplifying complex data interpretation for non-technical users and enhancing overall system monitoring efficiency.
- Enabled faster reactions to critical events in control systems by automating alerts and improving data comprehension.

ACADEMIC PROJECTS

Malaria Detection Using Deep Learning
May 2022 – August 2022

- Developed a Pytorch two-stage RCNN and autoencoder model that accurately detects malaria-infected red blood cells within thin blood smear images.
- Implemented data augmentation and preprocessing techniques to improve model generalization with multiple image sets.
- Achieved 98.3% classification and 91.9% testing accuracy.

Global Information System
January 2022 – April 2022

- Built a mapping application in C++ using the OpenStreetMap database and GTK for the user interface.
- Enhanced pathfinding performance by implementing bidirectional A* algorithm with landmarks preprocessing, achieving nine times reduction in execution time compared to baseline Dijkstra's algorithm.
- Optimized the traveling salesman problem using non-deterministic algorithms including simulated annealing, securing 3rd place out of 120 teams.

EDUCATION

University of Toronto
BASc in Computer Engineering
Expected Graduation: April 2025
Annual GPA: 3.87
Minor in Artificial Intelligence

SKILLS

Proficient
C++
C#
C
Python
JavaScript
Linux
Git

Familiar
Bash
ReactJS
ARM Assembly
SQL/NoSQL

RELEVANT COURSES

C++ Software Design (A+)
Operating Systems (A+)
Computer Organization (A+)
Computer Graphics (A+)
Algorithms and Data Structures (A)
Deep Learning – Pytorch (A)
C++ Fundamentals (A-)
Computer Networks (A-)
Introduction to AI (A-)

UPCOMING COURSES

Machine Learning
Software Engineering
Computer Security