Yousef Al Rawwash

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Skills

Languages: C, C++, Java, Python, Cython, HTML, CSS, JavaScript, SQL, Verilog, RISC-V Assembly
Machine Learning Libraries: NumPy, Pandas, PyTorch, TensorFlow, Scikit-learn, nltk, keras
Frameworks: Dash, Plotly, openMP, speech_recognition, pydub, MongoDB, Express.js, React, Node.js, JSON

Education

Engineering Science, *Machine Intelligence* — University of Toronto   **Sep. 2021 – Apr. 2026**

- Recipient of University of Toronto's Dean's Honor List Award for Academic Excellence
- **Relevant Courses**: ESC180: Computer Programming, ESC190: Computer Algorithms and Data Structures, ECE253: Digital and Computer Systems, APS360: Fundamentals of Deep Learning, ECE358: Foundations of Computing, ECE444: Software Engineering

Experience

Full Stack Developer — Sales Dynamics   **June 2023 – Present**

- Leveraging proficiency in front-end and back-end development to revamp Sale's dynamics website.
- Contributing to database design and management using SQL and NoSQL, enhancing data security and efficiency.
- Independently delivering top-tier code to enhance app performance and user experience.
- Technologies: HTML, CSS, JavaScript, MongoDB, Express.js, React, Node.js, Agile, GitHub, SQL, NoSQL, Linux API

Software Engineering Research Assistant — University of Toronto   **May 2023 – Present**

- Pioneering the utilization of Cython to bridge Python-based machine learning models with existing C++ libraries, establishing a seamless pipeline for model training and inference.
- Developing robust testing frameworks that covered both the machine learning models in Python and the C++ components, ensuring an **overall system accuracy of 99.7%.**
- Leveraging C++'s computational efficiency, to achieve up to **800x speed improvement in ML model training**.
- Developed an interactive web application modelling major trends in the simulation and allowing for Data Visualization, of 500,000 persons over 30 days for 10 simulations.
- Technologies: C++, Cython, Python, openMP, Dash, Plotly, CSS, JSON, pandas, NumPy, Bootstrap, Linux API

Embedded Software Developer — UofT Formula Racing Design Team   **January 2023 – Present**

- Implementing a program to help the vehicle to move to its next position using C++.
- Simulating the car using FSSIM simulator and gained knowledge in using ROS elements.
- Developing firmware for controllers and working with CAN protocol.

Cyber Security Analyst Intern — Qatar Steel   **June – August 2022**

- ISO27001 implementation and maintenance over 114 controls complying with GDPR and NIS regulations.
- Applied a centralized logging system, SIEM, with the help of big data analytics and machine learning algorithms to gain security insight and **protect against 10,000+ daily cybersecurity threats.**
- Utilized the OSI model to secure all levels of the LAN **protecting 200+ users with 0 major attacks.**

Projects

Multimodal Sentiment Analysis using Deep Learning   **May – August 2023**

- Developed a sentiment detection system targeting diverse sources like news headlines and audio recordings to discern public perception, influencing sectors from finance to public relations.
- Utilized LSTM model, achieving ~**97% accuracy for unseen data** across datasets totaling > 2.1 million values.
- Technologies: TensorFlow, PyTorch, scikit-learn, nltk, pandas, keras, matplotlib, speech_recognition, pydub

2048: Clone of the popular 2048 game   **December 2022 – January 2023**

- Achieved highly optimized code, ensuring smooth gameplay on various devices, **reducing memory usage by 25%.**
- Conducted rigorous testing and debugging, resulting in a flawless, error-free game, demonstrating meticulous attention to detail and quality assurance skills.
- Technologies: Python, PyGame, tkinter, GUI, NumPy, collections, os, itertools, sys, time, Windows API