

SAFWAN HOSSAIN

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Education

Graduate Certificate (OCGC), Applied A.I. Solutions Development

September, 2025 – Aug, 2026

George Brown Polytechnic

Bachelor of Engineering (B.Eng.), Computer Engineering

June, 2025

Toronto Metropolitan University (formerly Ryerson University)

Technical Skills

Programming and Scripting: Python, JavaScript, C, Java, C#

AI Tooling: Cursor, Claude Code; LLM/Agent Orchestration; Skill Management, Knowledge Graphs, MCPs

Frameworks and Libraries: React, Django, .NET, Java EE, TensorFlow, PyTorch

IT Infrastructure and Tooling: WSL2, Linux, Docker; AWS; Git/GitHub; Pytest, JUnit, Jest

Networking and Messaging: REST, Sockets/WebSockets, RPC, AMQP (RabbitMQ)

Data and Viz: PostgreSQL, MySQL, MongoDB; Tableau

Embedded Systems: ESP8266/32, Teensy, Raspberry Pi Pico, Arduino; Raspberry Pi; ARM Cortex-M, Keil uVision

Experience

RS Design Construction & Consultancy Inc (Part-Time)

October 2024 - Present

Full-stack Developer

Toronto, Ontario

- Successfully led a large-scale data migration with zero data loss and minimal operational disruption. Implemented an ETL pipeline for migrating scattered Excel workbooks to standardized CSV spreadsheets to a centralized database; handled multi-format data and edge cases with robust system of staged parsers and rule-based validation, falling back to LLM-assisted normalization and a post-validation.
- Partnered with IT personnel to deploy and maintain VPN infra, enabling secure remote access to company resources.

Toronto MetRobotics

October, 2023 – June, 2025

Controls Systems Engineer/Full-stack Developer

- Received the highest Systems Acceptance Review score in University's history at 97%, propelling TMU into the Top 30 among 102 teams around the world to compete in University Rover Challenge. Improved university's ranking to 15th.
- Implemented "differential driving" mechanism, optimizing controller usage and enabling additional motor primitives.
- Developed a React frontend (MUI+Tailwind) with a Python/WebSocket backend to communicate telemetry+commands
- Developed firmware and an auto-start Linux data-ingestion pipeline to boot up sensor capture and onboard processing.

Projects

"Resumate" - Template Aware AI-Tailoring 🤖 | *Jinja2, Python-docx, Docxtpl, Vue+Vite, LLM SDKs, FastAPI*

- Built a privacy-first, multi-model resume tailoring engine, saving users 20 minutes per job application.
- Unlike alternative OSS with fixed templates or only PDF support, Resumate supports the user's own defined templates and has true doc/docx support (along with .tex and .txt support).
- Engineered near-deterministic document pagination pipeline: programmatically analyzes rendered outputs that feeds character budget info to the multi-pass LLM retry system to (nearly) guarantee N-page constraints, eliminating an estimated 10 minutes of manual formatting per document. Project supports both Vue GUI and CLI.

Landmine Detection Rover 🤖 | *C, JS, Python, MongoDB, RabbitMQ, Docker, ESP32/8266, Raspberry Pi, Teensy*

- Ranked among Top 3 projects within Computer Engineering discipline at university-wide Capstone competition.
- Engineered a remote-controlled landmine-detection rover with real-time telemetry. Designed and implemented the software/hardware architecture, network communications, PCB design, module procurement, and webapp backend.

"EduTrack" - Academic Roadmap Tool 🤖 | *CheerioJS, Axios, ExpressJS, React*

- Web-app that creates a road map for students to see what courses in their program are available/unavailable to them based on their completed prerequisites. Estimated time saved per course: 10 minutes; per semester: 1 hour.
- Web scraped university pages and aggregated all information. Performed own business logic to analyze per-course requirements and compare with user completion. In-progress update: Redis cache implementation.

Certifications

AWS Certified Solutions Architect - Associate (2026)