

ALI HUSSEINI

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EDUCATION

Mechatronics Engineering, University of Waterloo

Sept 2025 – April 2030

- Candidate for Honours BAsC in Mechatronics Engineering | 1A Term
- Relevant courses: Digital Computation (C++, OOP), Calc I, Linear Algebra (Python), Engineering Design and Communication (Excel, AutoCAD, SolidWorks)

EXPERIENCE

Firmware Developer, University of Waterloo Formular Electric, Waterloo, ON

Sept 2025 – Present

- **Developed and tested embedded C/C++ firmware** for STM32-based ECUs, improving communication reliability between motor, sensor, and control subsystems
- Debugged and validated CAN bus and UART signal flow using simulated voltage inputs, **reducing firmware communication errors during testing by ~20%**
- Integrated STM32 firmware with the firmware team through GitHub workflows, streamlining version control, testing, and documentation

Tutor & Communications Executive, Garth Webb SS Peer Tutoring Club, Oakville, ON

Sept 2024 – June 2025

- Co-founded the club and **expanded reach to over 200 students**, managing public announcements and emails, as well as overseeing communications between teachers, tutors, and students
- **Tutored a diverse group of 50+ students** in Math and Science (grades 9-12), **boosting academic performance by up to 15%** and fostering strong study habits
- **Adapted my teaching strategies** to match various learning styles, ensuring engagement and a strong ability to grasp concepts

Co-op Student Technician, Volvo Cars Oakville, Oakville, ON (1-month full-time placement)

July 2024 – Aug 2024

- Partnered with senior automotive technicians at a leading dealership to **diagnose and resolve complex system malfunctions**, leveraging systems thinking, workplace safety practices, and root cause analysis to ensure reliable outcomes
- Supported various technicians with diverse working methods, **adapting seamlessly to different workflows** and contributing to quick completion of critical repairs in a high-pressure, fast-paced environment

PROJECTS

Joblyze - AI Job Posting Analyzer & Skill Extractor

Aug 2025 – Sept 2025

- **Developed an AI web app** in Python/Streamlit using Ollama LLMs to summarize job postings and extract categorized skills (Required, Preferred, etc.) with higher accuracy than regex/dictionary methods.
- Implemented resume upload + AI-driven skill gap analysis, enabling users to see strengths and incompetencies instantly.
- **Delivered a clean single-page interface** with progress indicators and downloadable reports, providing an end-to-end job analysis solution.

Electronic Safe – Locked Website

May 2025 – June 2025

- **Engineered an embedded security system** on ESP32 using C++ and PlatformIO, integrating keypad input, servo motor, LEDs, and a temperature sensor to replicate a functional electronic safe.
- Extended functionality by connecting the ESP32 to Wi-Fi and **developing a web interface using NodeJS that synchronized with the physical safe, implementing a full-stack interaction** causing the website to be locked/unlocked in real time based on hardware status.

SKILLS & INVOLVEMENT

- **Skills:** Python, C++, Java, Typescript, JavaScript, React, SQL, HTML/CSS, NodeJS
- **Tools:** AutoCAD, Autodesk Inventor, Fusion360, Solidworks, Microsoft Excel
- **Involvement:** UN-Habitat QOL Hackathon – Real-World Fit Award | Energy-Engineering-Robotics SHSM | DECA Provincials
- **Certifications:** First Aid & CPR-AED, WHMIS, Worker Health and Safety