

ALI HUSSEINI

a3husse@uwaterloo.ca | +1 (289) 400-4808 | alihusseini.vercel.app | linkedin.com/in/ahusseini-profile | github.com/alihuusseini07

EDUCATION

- Mechatronics Engineering**, University of Waterloo Sept 2025 – April 2030
- Candidate for Honours BSc 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