

Muhammad Saad

1(587) 968-3345 | m46saad@uwaterloo.ca | [linkedin.com/in/muhammadsaaduw](https://www.linkedin.com/in/muhammadsaaduw) | github.com/saadafsy | Waterloo, ON

SKILLS

Hardware: Arduino, Altium Designer, Microcontrollers, Circuit Assembly, Wiring, Resistors, PWM, UART, Schematics

Languages: Python, C++, MATLAB

Frameworks & Tools: Pandas, Requests, VS Code, Arduino IDE, MS Word, PowerPoint, Excel, PowerBI, AutoCAD

Technical Principles: Object-Oriented Programming (OOP), APIs, JSON, Automation Scripting

EDUCATION

University of Waterloo, Faculty of Engineering | Waterloo, ON

September 2025 – Present

Bachelor of Applied Science in Electrical Engineering

- **Relevant Courses:** Classical Mechanics, Fundamentals of Programming C++, Project Studio, Linear Algebra for Engineering, Calculus for Engineering

PROJECTS

Arduino Spatial Motion Tracker

Sept 2025

- Integrated a 3-axis accelerometer and ultrasonic sensor on a breadboard with Arduino, following circuit **schematics** to capture and transmit multi-axis acceleration and distance information via **UART serial communication**.
- Developed and modified **C++ code** in the Arduino IDE to acquire and process sensor data, enabling patient motion tracking and prototyping non-invasive delirium monitoring for use in public healthcare.

SMS Stock Trading News Alert

Aug 2025

- Developed a Python program that uses the **Alpha Vantage API** to track daily stock price changes over 5% and retrieves the top 3 news articles from **News API** for context.
- Automated real-time SMS/email alerts with **Twilio** and **smtplib**, enabling instant delivery of market updates through secure API authentication and JSON parsing.

EXPERIENCE

Information Officer

Calgary, AB

Elections Canada

April 2025

- Worked **15+ hour shifts** managing voter registration and information services, helping **1000+ people daily** navigate the voting process.
- Collaborated with **15 election workers** to streamline voting operations and provide accommodations for voters, reducing processing time by **up to 25%**.

STEM Tutor

Calgary, AB / Waterloo, ON

Self-Employed

July 2022 – Present

- Tutored students in mathematics, physics, and programming, reinforcing foundations in **algebra, calculus, and mechanics**.
- Introduced programming fundamentals through Python projects, connecting coding concepts to real-world applications.

EXTRACURRICULAR ACTIVITIES

Engineering Ambassador

Waterloo, ON

University of Waterloo

September 2025 – Present

- Selected to represent the Faculty of Engineering to prospective students through tours, Shadow Days, and the UniBuddy platform.
- Demonstrated leadership and interpersonal skills by collaborating with ambassadors to coordinate engineering outreach events, which helped develop teamwork, adaptability, and effective communication among participants.

ACHIEVEMENTS & AWARDS

President's Scholarship of Distinction: Awarded by University of Waterloo for outstanding high school academic achievement. (97.2% admissions average)

Alexander Rutherford Scholarship: Provincial award recognizing students ranking in the top percentile of Alberta's high school graduates.

PUBLICATIONS

"Raspberry Pi for IoT, Robotics, and Embedded Systems," [ResearchGate, 2025](#) – Technical article viewed by over 2,800 people worldwide.