Ali Arsalan Wafaee

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Education

University of Washington Tacoma Expected June 2027
B.S. Computer Science & B.S. Computer Engineering

Experience

Research Assistant, University of Washington Tacoma Nov 2025 – Present

- Contributing to a **servo-guided** model-rocket **research** project analyzing flight dynamics using IMU and onboard sensor data.
- Assisting in embedded development, data collection, and prototype validation for follow-up work to an **IEEE UEMCON paper**.
- Working directly with faculty on **hardware design**, firmware improvements, and experimental testing for future publications.

Full-Stack Software Engineering Intern, University of Washington Tacoma Oct 2025 – Present

- Developing internal campus-routing tools using **Go**, **SQL**, **JavaScript**, and **REST APIs** with Docker containerization.
- Building **backend** systems with **authentication, error handling, and API integration using Postman and Supabase**.
- Implementing responsive **frontend** interfaces and integrating with backend services through **RESTful endpoints**.

Technical Projects

IEEE PES Project — Face Tracking & Recognition (Raspberry Pi) 2025

- Built a real-time face tracking system using OpenCV and a Pi Camera.
- Implemented face recognition algorithms for identification and motion-following.

IEEE WiFi Sensing — RF-Based Motion & Localization 2025

- Developing WiFi sensing systems for gesture detection and indoor motion tracking.
- Analyzing RSSI/CSI patterns to detect movement and environmental changes.

Switch Flipper — ESP32 IoT Automation 2025

- Built a WiFi-controlled switch actuator using an ESP32.
- Designed a web interface to operate switches remotely.

IEEE RC Car — Raspberry Pi Controlled Vehicle 2024

- Designed a Pi-driven RC car with wireless control and motor driver integration.
- Experimented with computer vision steering using camera input.

Pocket Drone — ESP32 Micro-Drone Prototype 2024

- Built a lightweight drone with custom firmware and flight testing.
- Tuned motor balance and sensor response for stability.

Leadership

Officer, IEEE WiFi Sensing Chapter 2025 – Present

- Help coordinate project development across embedded and RF sensing teams.

Shift Lead, MC Lane Security 2025 – Present

- Led team operations, training, and technical workflows.

Volunteering & Competitions

ICPC Regional Volunteer 2024

- Assisted with event setup, team coordination, and judging logistics.

ICPC Regional Competitor 2025

- Competed in algorithmic problem-solving and team programming challenges.

Skills

Languages: Python, Java, C++, Go, JavaScript, SQL, HTML/CSS
Technologies: Linux, Git, Raspberry Pi, ESP32/ESP8266, REST APIs, Embedded Systems
Tools: VS Code, Figma, Photoshop, Docker, Supabase, Postman

Certificates & Memberships

- IEEE Student Member
- Java Object Oriented Programming – Great Learning Academy