

OMAR A. AYDAH

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Education

Westfield State University

Westfield, MA

Bachelor of Science in Computer Science

Expected May 2027

- Dean's List
- LEAD Scholars Program: Selective leadership development program for high-achieving students
- Relevant Coursework: Software Engineering, Data Structures and Algorithm Analysis, Computer Organization and Architecture, Computer Security, Software Application, Database Application, Computer Networking, Python II, Calculus III

Technical Skills

Languages: Python, SQL/MySQL, R, Java, TypeScript, JavaScript, HTML/CSS

Frameworks & Libraries: FastAPI, Pydantic, React, Next.js, scipy, rapidfuzz, NumPy, Pandas, Tailwind CSS, Axios, BeautifulSoup, Requests, Zod, shadcn/ui, ggplot2

Tools & Platforms: Git, GitHub, Docker, Supabase, PostgreSQL, SearXNG, SerpAPI, Ollama, REST APIs, Vite, pytest, npm, Postman, Vercel, CI/CD, Linux/Bash, pip-tools, Tableau, MATLAB, Microsoft Office Suite

Additional: Bilingual in Arabic and English

Experience

Development Monitors LLC

Washington, D.C.

Software Development Engineer

May 2026 – Present

- Owned end-to-end backend architecture for RIGORA, an AI-powered research integrity platform built with Virginia Tech faculty and funded by the Gates Foundation, engineering the full pipeline from academic database search to detect questionable research practices through automated report generation (Python, FastAPI, Pydantic)
- Delivered live product demos directly to the Gates Foundation project lead, showcasing full pipeline capability end-to-end and contributing to a \$500K contract secured for Development Monitors LLC
- Built multi-database search infrastructure translating a single query across 5 academic databases (PubMed, Crossref, OpenAlex, Semantic Scholar, Google Scholar) with database-specific syntax (e.g., PubMed's MeSH term format), surfacing 900,000+ deduplicated candidate records per search that get narrowed down to a targeted reference corpus
- Diagnosed and resolved critical search-accuracy failures in production by rebuilding the platform's statistical layer (scipy, rapidfuzz) for power analysis and bootstrap confidence intervals, cutting query latency 43% and scaling test coverage 3.4x (76 to 260+ tests)

Westfield State University

Westfield, MA

Residential Assistant

August 2025 – Present

- Oversee residential community of 40 students within 280-student building; develop and execute 6+ programs per semester focused on student engagement, leadership development, and academic success
- Provide indirect counseling and conduct 20+ one-on-one conversations per semester regarding college success strategies, conflict resolution, and resource navigation

LEAD Scholars Program

Westfield, MA

Peer Counselor, Ambassador & Work Study

September 2023 – Present

- Mentored 80 incoming freshmen during 5-week Summer Bridge program; delivered academic workshops, facilitated peer study groups, and provided individualized guidance to support college transition
- Represent program at recruitment panels, information sessions, and outreach events to prospective students

Projects

RIGORA – Research Integrity Platform

July 2026

- Built a research integrity platform (Python, FastAPI, Pydantic) that flags questionable research practices in academic literature before it can shape funding decisions, developed with Virginia Tech faculty for the Gates Foundation
- Engineered citation graph traversal, multi-database literature retrieval, and a 5-class misconduct classification pipeline, powering automated evidence-based report generation

Bridge – Mentorship Platform | Live Demo

April 2026

- Built full-stack mentorship platform using Next.js, React, and Supabase, featuring role-based dashboards, session tracking, and mentor onboarding flows across two development sprints
- Enabled reliable session scheduling for Bridge users by integrating the Google Calendar API and resolving a Google OAuth authentication issue blocking local development, resulting in successful production deployment

Certifications & Training

Telstra Cybersecurity Job Simulation

Virtual

Completed via Forage Online Platform

October 2025

- Completed hands-on simulation covering incident response, malware analysis, and security infrastructure assessment