Aaliyan Muhammad

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Education

University of Western Ontario — London, Ontario
Bachelor of Science · Computer Science — *Expected 2027*

Experience

Software Developer Intern — May 2026 – Aug 2026
Guidewire Software — *Mississauga, ON*

- Resolved and shipped **50+ production defects** across **PMIC's enterprise insurance platform** using **React**, **HTML**, **CSS/SASS**, **TypeScript**, and the **Jutro design system** within a scalable micro-frontend architecture.
- Implemented **user stories** for the Agent Experience application, including **Whatfix integration** and **Dockerized test deployments**, collaborating with cross-functional stakeholders to translate requirements into production-ready features.
- Managed **15+ application and micro-frontend deployments** across **Agile workflows** using **Bitbucket**, **TeamCity**, and **Azure DevOps** to support **CI/CD** and reliable release delivery.
- Designed and presented a **AI-assisted testing workflow** that automated repetitive defect setup, **saving ∼10 minutes per test** and accelerating validation across the engineering team.

Programming Tutor — Nov 2024 – Oct 2025
EduXora — *London, ON*

- Delivered customized **Java** and **C/C#** instruction to over **100** first-year students through structured lessons, guided practice, targeted examples, and feedback increasing average test scores by **20%** and coursework grades by **25%**.
- Led interactive problem-solving sessions focused on reinforcing core concepts and applied reasoning skills, encouraging participation and discussion, resulting in a **30% increase in student engagement** and stronger confidence.

Projects

Career Compass | *React, TypeScript, Spring Boot, Python, PostgreSQL, AWS, Docker* | *Live* — Sept 2025 – Nov 2026

- Engineered a **full-stack** career management platform using **React**, **TypeScript**, and **Spring Boot**, enabling authenticated application tracking, document management, and persistent **PostgreSQL** workspaces.
- Developed a **RAG-based Career Copilot** using **OpenAI** embeddings and **PostgreSQL/pgvector**, implementing document chunking and vector retrieval to ground AI responses in resumes, job descriptions, and project notes.
- Integrated **Google sign-in** through **AWS Cognito** using **OIDC** and **PKCE**, preserving existing account ownership, and implemented **Resend-powered** contact emails with credentials managed through AWS Secrets Manager.
- Deployed **Dockerized React**, **Spring Boot**, and **Python AI** services to **AWS ECS/Fargate** using **Terraform**, integrating **RDS, S3, and HTTPS networking** for a production-hosted application.

audioDecoded | *Python, Librosa, DSP, NumPy, FastAPI, PostgreSQL, JavaScript* | *Live* — Feb 2026 – Sept 2026

- Built a **full-stack audio analysis web app** using **Python**, **FastAPI**, and **Librosa** to detect BPM and musical key from uploaded or recorded audio via real-time **DSP pipelines**, achieving **∼98% accuracy** across benchmark test tracks.
- Implemented **DSP algorithms** using **Librosa**, **NumPy**, and **SciPy**, leveraging harmonic–percussive separation, chroma features, and onset strength analysis to evaluate **150+ audio samples** and improve tempo estimation reliability.
- Developed a responsive single-page interface with **HTML**, **CSS**, and **JavaScript** supporting drag-and-drop uploads and live microphone input, **processing audio files in under 2 seconds** with real-time result visualization.

Smart City Microservices System | *Python, FastAPI, Docker, Redis, Google Cloud* — Sept 2026 – Present

- Developing a **distributed smart city platform** featuring **7 independently deployable microservices**, with **RESTful APIs**, dynamic service discovery, and centralized request routing.
- Designing a **fault-tolerant service registry** with automated registration, heartbeat-based health monitoring, and failover mechanisms to improve system availability and fault isolation.
- Building a **cloud-native** infrastructure on **Google Cloud**, leveraging **Docker containerization**, horizontal autoscaling, and load balancing to support scalable and reliable service deployment.

Technical Skills

Languages: Java, TypeScript, JavaScript, Python, SQL, C++, C, C#, HTML/CSS, Assembly
Frameworks: Spring Boot, FastAPI, Express, Tailwind CSS, LangChain
Libraries: React, NumPy, SciPy, Librosa, Framer Motion
APIs & Databases: PostgreSQL (pgvector), RESTful APIs, OpenAI API
Developer Tools: Git, GitHub, Bitbucket, Docker, Terraform, TeamCity, Azure DevOps, CI/CD, SDLC
Platforms & Environments: AWS, Microsoft Azure, Google Cloud, Node.js, Linux/Unix