

Mikayel Ahmed

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Profile

Computer Science graduate with projects spanning AI tooling, distributed systems, real-time architecture, and infrastructure. Driven by hard problems and the process of working through them. Looking to keep pushing further in an environment that demands the same.

Experience & Projects

LIDE - Live Integrated Development Environment

January 2026 - Present

- *Solo Project · Python · FastAPI · NextJS · PostgreSQL*
- Architected a live development environment that maps imported GitHub repositories into a structured system of pages, API endpoints, and services via AST parsing, regex, and file system traversal.
- Engineered a real-time feedback loop and intelligent endpoint test generator that uses existing function signatures to produce test data, replacing Postman and manual terminal workflows.
- Designed and built a component generation tool and design editor, consolidating UI preview, schema management, and project setup into a single environment.
- Currently evaluating a Tauri port for distribution given runtime environment constraints.

Synapse - AI Model Platform

August 2025 - November 2025

- *Solo Project · Go · NextJS · PostgreSQL · Deployed on AWS EC2*
- Designed and built a multi-model platform supporting BYOK, streamed side-by-side response comparison and timing across multiple Hugging Face models simultaneously.
- Engineered conversational memory using LLM-generated compression before PostgreSQL storage, maintaining context across sessions without unbounded growth.
- Built a custom web search tool from scratch to bridge the tool-use gap in open-source models, enabling agentic behaviour without relying on fine-tuned support.
- Backend written in Go and deployed on AWS EC2 via a self-built GitHub webhook CI/CD pipeline handling pull, dependency install, service restarts, and failure notifications.

Job Aggregator & CV Analyser

May 2025 - June 2025

- *Solo Project · Python · React · PostgreSQL · Deployed on Render and Vercel*
- Built a Full-Stack REST API Solution for job searching, fetching 100+ job postings per search from JSearch API with deduplication logic to filter duplicate listings
- Developed resume parsing service extracting skills and experience using document analysis for candidate evaluation
- Integrated LLM-powered conversational interface enabling natural language job search queries and recommendations
- Deployed the full-stack app using Render (backend) and Vercel (frontend).

Real Time Trading System

June 2025 - July 2025 | Redesigned: Apr - 2026 - Present

- *Solo Project · NextJS · Go · Python · PostgreSQL · Redis · K6 Testing*
- Engineered a fanout WebSocket architecture supporting 1000 concurrent users with sub-3ms p99 latency under sustained load, verified via K6 Testing
- Built a session-scoped authentication model that moved identity verification to connection establishment, removing repeated auth checks from the execution hot path.
- Designed a batched execution pipeline using Redis and bulk PostgreSQL inserts sustaining 50 executions/sec with zero failed executions across 1500 execution events during load testing.
- Delivering 3000 points of historical OHLCV data on connection via parallel fanout and retrieval from Redis without blocking live feed, backed by Parquet storage for fast retrieval
- Implemented stochastic price simulation using Brownian motion models anchored to live market prices for realistic execution behaviour.
- Implemented Go to handle all execution and real-time logic, where Python manages data ingestion and a Redis write layer

Education

BSc Computer Science - University of Westminster

September 2023 - July 2026 (ETA)

- *Expected Grade: 2:1*
- Relevant Modules: Game AI, AI & Machine Learning for Data Mining, Algorithms & Data Structures, Software Development
- ML Coursework involved building predictive models for breast cancer patient outcomes - Estimating mortality status and treatment term length from tumour characteristics using scikit-learn and PyTorch.
- Game AI module fed into personal projects: a Unity game built around procedural generation, enemy AI systems and dynamic spawners. Currently building a second Unity project with fully animated models authored in MotionBuilder.
- Joined a group project as a frontend developer, took on technical maintenance and informal team leadership as the project matured. The final system included full auth, admin dashboard and results aggregation.

Skills

Languages: Python, Go, JavaScript / TypeScript, C#

Frameworks & Libraries: React, NextJS, FastAPI, Node.js

Databases: PostgreSQL, SQLite

Infrastructure: AWS EC2, Github Webhooks, CI/CD, WebSockets, REST APIs

Concepts: System Design, AST Parsing, Real-Time Systems, Machine Learning

Other: CTFs, Bug Bounty, Visual Studio, Figma, Unity, MotionBuilder, Blender