

Fouzia Mahtab

Applied AI Engineer | Backend Software Engineer

Boston, MA | 781-777-5239 | fouziam@gmail.com | [linkedin.com/in/fouziamahatab](https://www.linkedin.com/in/fouziamahatab)

SUMMARY

Backend engineer with 10+ years of experience building APIs and production web services, now focused on applied AI development. I build LLM-powered applications using Python, FastAPI, PostgreSQL, RAG, and structured outputs. My production engineering background includes debugging, reliability, and supporting systems used across 10,000+ customer websites.

TECHNICAL SKILLS

Applied AI: OpenAI API, Anthropic Claude API, RAG, embeddings, vector search, tool-using agents, structured outputs, prompt engineering, LLM evaluation.

Backend & Data: Python, FastAPI, SQLAlchemy, Pydantic, REST APIs, PHP, JavaScript, TypeScript, PostgreSQL, MySQL, BigQuery, pgvector.

Engineering: Docker, Git, CI/CD, automated testing, TDD, production monitoring, API debugging.

SELECTED AI PROJECTS

QueryPilot AI | Retail Analytics Copilot | github.com/fmahtab/querypilot-ai

Python, FastAPI, PostgreSQL, SQLAlchemy, OpenAI API, RAG, Docker

- Built a business analytics copilot that answers natural-language questions using business documentation.
- Implemented a RAG workflow that retrieves relevant context and generates grounded answers with source attribution.
- Added short-term session memory for conversational continuity and durable memory for retaining relevant context across sessions.
- Developed the FastAPI service, /ask request and response schemas, PostgreSQL data layer, SQLAlchemy models, and Alembic migrations.
- Built an evaluation suite covering request routing, retrieval quality, groundedness, source attribution, questions requiring database access, and unsupported-query handling.

CareerPilot | AI-Powered Job Application Platform | github.com/fmahtab/career-pilot

Python, FastAPI, PostgreSQL, SQLAlchemy, JWT, Docker, Anthropic Claude API

- Built secure REST APIs for user authentication, resume management, job applications, resume-to-job matching, AI cover-letter generation, and structured resume review.
- Parsed PDF and DOCX resumes and validated structured Claude-generated outputs with Pydantic, including ATS score, strengths, missing keywords, priorities, and recommended changes.
- Implemented user-level authorization, secure file-upload handling, and containerized the application with Docker Compose.

PROFESSIONAL EXPERIENCE

Dealer Inspire / Cars Commerce | Software Engineer

Jul 2022 - Apr 2026

- Developed and maintained PHP-based backend services and plugins powering inventory experiences across 10,000+ dealership websites.
- Resolved production incidents by tracing API workflows, analyzing New Relic and Datadog telemetry, and debugging performance, memory, and data-synchronization failures.
- Improved reliability through targeted fixes, rollbacks, and performance optimizations, including remediation of an out-of-memory incentives workflow and a broken inventory-feed sync.
- Collaborated with product, QA, and platform teams on production releases, cross-repository changes, and high-priority customer issues.

PROFESSIONAL EXPERIENCE

Nexient (Client: Etsy) | Developer II

Apr 2021 - Jul 2022

- Migrated two large WordPress blogs to Etsy's internal platform with zero data loss while preserving content integrity and SEO behavior.
- Refactored PHP and TypeScript components and used BigQuery to process and validate high-volume migration data.
- Applied PHPUnit and test-driven development practices to reduce migration risk and improve maintainability.

Digimagination LLC | PHP Developer

May 2014 - Mar 2021

- Built e-commerce APIs and backend workflows for ordering, inventory, shipping, payments, reporting, and marketing automation using PHP, Laravel, MySQL, and third-party integrations.
- Integrated Amazon, eBay, PayPal, Authorize.Net, UPS, FedEx, Mailchimp, and other external services into business-critical workflows.
- Automated Mailchimp segmentation and campaign workflows, eliminating manual work and saving approximately \$50K annually.

AI TRAINING

TAI Labs | Agentic AI Engineering Bootcamp

May 2026 – Sep 2026

- Completed project-based training in LLM APIs, RAG with pgvector, agent workflows, TRACE evaluation, memory, and deployment using Python and FastAPI.
- Built QueryPilot AI as the capstone project, implementing retrieval, grounded responses, short-term session memory, durable memory, and systematic evaluation for a retail analytics use case.

EDUCATION

RCC Institute of Information Technology | Kolkata | India

Bachelor of Technology (B.Tech.) in Computer Science & Engineering.

Project dissertation, Indian Statistical Institute: Built a C data-processing pipeline and K-means clustering implementation for high-volume gene-expression data.