

Zainab Hamid

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PROFESSIONAL SUMMARY

Detail-oriented **Backend Engineer** with a strong foundation in **Python** and **FastAPI**. Proven experience in building scalable **RESTful APIs**, optimizing **PostgreSQL** databases, and developing automated data pipelines. Skilled in integrating **AI** services into backend architectures and writing clean, maintainable code. Passionate about backend system design and eager to contribute to high-performance engineering teams.

TECHNICAL SKILLS

- **Backend Engineering:** Python (Advanced), FastAPI (Expert), AsyncIO, RESTful APIs.
- **AI & GenAI:** OpenAI API, LangChain, RAG Pipelines, Vector Databases, Embeddings.
- **Data Processing:** Pandas, NumPy, ETL Pipelines, Data Validation.
- **Databases:** PostgreSQL (Complex SQL, Indexing), MongoDB.
- **Tools:** Docker, Git, Postman, Linux.

PROFESSIONAL EXPERIENCE

Codantrix Labs | Python Backend Developer | *Lahore* | *Nov 2023 – Sep 2025*

- **API Architecture:** Designed and maintained scalable REST APIs using **FastAPI**, serving as the backbone for client data dashboards.
- **Database Optimization:** Managed **PostgreSQL** databases, writing complex queries and optimizing indexing to reduce latency by 30%.
- **System Design:** Collaborated on backend architecture decisions to ensure service reliability and scalability.
- **Production Code:** Wrote clean, tested, and documented Python code, adhering to team CI/CD standards.

DeepVision AI | Machine Learning Engineer Intern | *Lahore* | *Oct 2025 – Dec 2025*

- **Data Pipelines:** Built automated ETL pipelines using **Pandas** and **NumPy** to ingest and process large-scale datasets.
- **Data Cleaning:** Wrote scripts to programmatically validate and sanitize raw data for downstream AI systems.
- **Collaboration:** Worked closely with ML engineers to align data schemas with model requirements.

KEY PROJECTS

Modern Social Media Backend API (Python, FastAPI, PostgreSQL, Docker)

- **Relevance:** Scalable Architecture & Database Design
- Architected a high-performance backend API capable of handling complex data relationships (users, posts, votes).
- Implemented Containerization with Docker to ensure consistent deployment across environments (a key requirement for Data Engineering roles).
- Designed a normalized PostgreSQL schema to ensure data consistency and efficient retrieval.

HirePrint AI – Intelligent Data Processing (Python, Gemini API)

- *Relevance: Integrating Generative AI capabilities*
- Built a backend system that ingests unstructured client text and utilizes LLMs to parse it into structured JSON objects.
- Integrated **Generative AI APIs** directly into backend business logic to automate requirement gathering.

Insurance Cost Analysis (Python, Pandas, Scikit-learn)

- **Relevance:** Data Analysis & Cleaning
- Conducted end-to-end Exploratory Data Analysis (EDA) on raw medical datasets to identify cost drivers.
- Performed statistical feature selection (Correlation Matrix, Chi-square) to clean data and improve predictive model performance.

Delta-1 Agent – Vector Search Pipeline (Python, Pinecone, LangGraph)

- *Relevance: LLM-based features & Embeddings*
- Developed a backend service that chunks text data, generates embeddings, and performs semantic search via vector databases.
- Optimized inference pipelines to handle context-aware user queries efficiently.

ADDITIONAL SKILLS & INTERESTS

- **Tools & DevOps:** Docker, Git/GitHub, Postman, Linux (Bash), VS Code, PyCharm.
- **Methodologies:** Agile/Scrum, REST API Design, OOP, Microservices Architecture, CI/CD Concepts.
- **Frontend:** HTML5, CSS3, Basic JavaScript (Integration with Backend APIs).
- **Soft Skills:** Technical Documentation, Problem-Solving, Remote Collaboration, Adaptability.
- **Fields of Interest:** Generative AI Agents, Large Language Models (LLMs), Backend System Design, Open Source Tools.