

# Fadhil Hussain

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## Summary

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Enthusiastic ML engineer with strong knowledge of core algorithms, NLP (vectorization, Word2Vec, embeddings), and deep learning (RNN, LSTM, GRU, attention, Transformers). Experienced in building retrieval-based AI applications using LangChain, FAISS, and ChromaDB, including RAG pipelines. Skilled in designing multi-agent routing systems, conversational history management, and SQL agents for natural language database interaction.

🔗 [LinkedIn](#) | [GitHub](#)

## Projects

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### HealthSphere – Multi-Agent Medical Assistant

*An intelligent medical bot using multi-agent LangChain for Q&A and medicine retrieval.*

- Deployed a multi-agent bot with a router dynamically selecting specialized agents.
- Implemented semantic search with FAISS + Sentence Transformers over medical datasets.
- Integrated real-time retrieval via Google, medical resources, and Wikipedia.
- Built a Streamlit web app with conversational memory for multi-turn dialogues.
- Applied prompt engineering to improve response accuracy.
- Live Demo: [healthsphere](#) | [GitHub](#)

### ZakathMate – RAG-based Islamic Learning Assistant

*An AI-powered assistant to learn about Zakath using RAG architecture.*

- Developed a RAG system to answer queries on Zakath.
- Used DeepSeek Light model for answer generation.
- Embedded custom Islamic knowledge using Cohere embeddings.
- Integrated LangChain + FAISS for efficient vector search.
- Leveraged AI to simplify learning about religious obligations.

### SQLBot – AI-Powered SQL Query Assistant

*An intelligent SQL assistant for natural language database queries.*

- Built SQL assistant using LangChain agents and SQLDatabaseToolkit.
- Enabled voice queries via OpenAI Whisper.
- Frontend: HTML, CSS | Backend: Flask (Python).
- Supported dynamic query execution on structured databases.

## Skills

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Machine Learning, Data Science, Python, Deep Learning, Statistical Analysis, TensorFlow, Keras, EDA, Programming, HTML 5, Flask, Streamlit, Docker, Linux, GitHub, FAISS, Vector Database, Langchain, RAG

## Education

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Institute of Distance Education University of Madras | Tamil Nadu

Master of Computer Application | 11/2025

GCT Thalassery | Kannur, Kerala

Bachelor of Computer Application | 07/2023

## Languages

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Malayalam, English, Arabic