Fadhil Hussain

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Summary

Enthusiastic and skilled in machine learning with a strong grasp of core algorithms and concepts (excluding XGBoost and AdaBoost). Experienced in natural language processing tasks such as vectorization, Word2Vec, and working with text embeddings. Knowledgeable in deep learning architectures including neural networks, RNN, LSTM, GRU, attention mechanisms, and the theory behind Transformers, encoders, and decoders. Familiar with using LangChain and vector databases like FAISS and ChromaDB to build retrieval-based AI applications, including **Retrieval-Augmented Generation (RAG)** pipelines. Proficient in developing **SQL agents** and integrating SQL-related tools for natural language querying and database interaction.

Skills

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

Hands-on-Projects

SQLBot – AI-Powered SQL Query Assistant
Developed an intelligent SQL query assistant using **LangChain agents** and **SQLDatabaseToolkit** to interpret natural language questions and retrieve database insights without exposing SQL queries. Integrated:

- **Speech-to-Text** with OpenAI Whisper for voice query input.
- **Frontend:** HTML, CSS, JavaScript.
- **Backend:** Flask (Python).
- Dynamic query execution on structured databases .

ZakathMate : An AI-powered assistant to learn about Zakath using RAG architecture

- Developed a Retrieval-Augmented Generation (RAG) application to help users understand the concept of Zakath.
- Used a **pretrained DeepSeek Light model** for generating answers based on user queries.
- Performed **text embedding using Cohere's embedding model** to convert custom Islamic knowledge into searchable vector format.
- Integrated LangChain framework and **FAISS** for efficient vector search and retrieval.
- Aimed to make learning about religious obligations accessible through modern AI tools.

Customer Segmentation Using Clustering

Performed customer segmentation to analyze purchasing behavior and demographics using unsupervised learning. The project involved:

- **Data Cleaning:** Handled missing values, removed inconsistencies, and standardized numerical features.
- **Exploratory Data Analysis (EDA):** Visualized customer distribution and relationships between key attributes.
- **Clustering Model:** Applied **unsupervised clustering algorithm** to identify distinct customer groups.
- **Insights & Interpretation:** Analyzed cluster characteristics to understand customer patterns and behaviors.

Education

Master Of Computer Application

Institute of Distance Education University of Madras, Tamil Nadu
11/2025

Bachelor Of Computer Application

GCT Thalassery , Kannur, Kerala
07/2023

HSC_Computer Science

GVHSS - Kadirur, Kadirur, Thalassery
04/2020

Languages

Malayalam, English, Arabic