MUHAMMAD HASNAIN

AI ENGINEER

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Artificial Intelligence Undergraduate (2021-2025)

SUMMARY

Experienced AI Engineer specializing in custom AI solutions, including Retrieval-Augmented Generation (RAG) and knowledge-based systems. Expertise in fine-tuning LLMs (LLaMA 3, Mistral7B, gpt4-mini), and deploying image generation models like Stable Diffusion 3 and Flux. Proficient with Groq, OpenAI and Gemini for developing advanced AI agents. Skilled in neural networks, deep learning, NLP, and computer vision, with hands-on experience in chatbot development, image processing, and predictive modeling. Proven ability to deploy scalable AI models and optimize real-time automation solutions.

WORK EXPERIENCE

ENDEVSOLS Deep Learning Expert

- **BRAINJEEE Chatbots** Developed 30 tutor chatbots for subjects like Urdu, Hindi, English, Math, and Science, designed to assist school and college students by utilizing BRAINJEE data stored in an S3 bucket, integrating FAISS for efficient query handling.Enhanced chatbots with vision capabilities for image interaction and audio processing for user queries, utilizing OpenAI as the LLM and implementing FastAPI for seamless chatbot deployment. Product
- **Property Report Generator** Developed a comprehensive property report generator using Python libraries such as Pandas, NumPy, and OpenAI, allowing for automated analysis of real estate data, including rental market trends and demographic insights based on a CSV input file. Implemented various data visualization techniques, to generate detailed reports that include local rental market analysis and economic indicators for properties.
- **AI-Powered Stock Data Analysis and Prediction System** Developed a FastAPI-based AI system integrating NLP, deep learning, and speech recognition to analyze stock market data, provide chatbot interactions, online learning option and predict stock prices. Implemented HuggingFace models, FAISS for vector search, and TensorFlow-based deep learning for accurate forecasting and interactive financial insights.
- **Intelligent Document Comparison and Data Extraction System** Developed an AI-driven document comparison system that extracts clauses, computes similarity scores using Hugging Face embeddings, and identifies missing, extra, and included clauses to assess document quality. Implemented a chunking mechanism to process large documents, utilizing OpenAI LLM to extract 60 key data points and structuring the results into a sequential table for deep comparison.

SELF PROJECTS

- **AI Trend Shopper** Developed a web-based app using React for the frontend and Python FastAPI for the backend, allowing users to create shops and manage clothing products.Integrated an automated marketing agent to generate promotional posters and send marketing messages via email and WhatsApp. Utilized PyTrend library for trend detection through web scraping and AI models, enabling users to visualize clothing based on current trends from image generation model.
- **LongTrainer Library** Created a library to facilitate easy chatbot development for production use, allowing developers to create chatbots with a single line of code.Designed for managing multiple bots with isolated, context-aware chat sessions, incorporating web scraping, web searching, and Retrieval-Augmented Generation (RAG) capabilities for enhanced conversational AI functionality GitHub

EDUCATION

Degree	Institution	Grade/CGPA	Year
BSAI	Comsats University Islamabad Institute	3.47/4	2021-2025
Class XII	Fauji Foundation College, Fatehjang	922/1100	2019-2021
Class X	Zamurud Secondary School, Fatehjang	947/1100	2017-2019

SKILLS

- **Languages** Python, SQL
- **Frameworks** PyTorch, TensorFlow, Keras, OpenCV, Scikit-learn, LangChain, Hugging Face, FastAPI, crewAI, SalesGPT, OpenAI, Groq
- **Tools** Linux, Jupyter Notebook, PyCharm, MS Office
- **Libraries** Keras, Pandas, Matplotlib, SciPy, CuDA