HAMZA JAMAL KHAN

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ABOUT

AI professional specializing in AI, Machine Learning, Deep Learning, GenAI, GANs, LLMs, Chat bots, NLP, Computer Vision, MLOps and Data Analytics. Specializing in developing RAG model chatbots and developed Legal GPT chatbot based on OpenAI API. Proficient in deploying models through CICD pipelines, Azure, Docker and Flask, applying NLP techniques for actionable insights. Skilled in Python, model development, and deployment, with a commitment to continuous learning and growth

EDUCATION

MSc. Data Science — **Aligarh, India**
Aligarh Muslim University (AMU) — **2022-2024**

B.Tech Mechanical Engineering — **Aligarh, India**
Aligarh Muslim University (AMU) — **2017-2021**

PROFESSIONAL EXPERIENCE

TechEnhance — **Bengaluru, India**
Artificial Intelligence Intern — **Feb-2024 –Present**

- Developed a 'Legal GPT' LLM chatbot designed for legal professionals to efficiently search court judgments and related legal documents.
    - Tech Stack: Azure OpenAI, Assistant API, Azure Cosmos DB, node js
    - Enhanced the initial architecture proposed by client to ensure optimal performance and usability.
- Developed a chatbot with RAG model using OpenAI API and Gemini API.
    - Tech Stack: OpenAI API, Gemini API, Astra DB (Vector DB), Flask, HTML, CSS, JavaScript.
    - Executed seamless CICD deployment using Azure Web App for efficient integration.

Inzane Labs — **Mumbai, India**
Machine Learning Intern — **Sep-2023 – Dec-2023**

- Designed and used various trading strategies (HFT), making predictions more accurate.
- Made data work at least 20% faster using Pandas and Numpy.
- Benefitted the company by improving algorithmic trading capabilities.

PERSONAL PROJECTS

Document Query Chatbot - LLM (Link)
GenAI/NLP

- **Chat Bot:** Developed a document query chat bot through which user can ask question to the chatbot based on the user input PDF file.
- **Scalable Storage:** Integrated AstraDB for scalable storage of language embedding.
- **Skill Proficiency:** LLM, OpenAI, Huggingface, Apache Cassandra, AstraDB, NLP, and Streamlit

Book Recommendation System – (Link)
NLP

- **Recommendation System:** Crafted personalized book recommendations from 1000 top-rated Amazon books using NLP based TF-IDF & Cosine Similarity.
- **Deployment:** Deployed the recommendation engine through Flask
- **Skill Proficiency:** NLP, recommendation algorithms, Flask, Web Deployment.

Image Generation – GAN (Link)
GenAI

- **Image Generation:** Implemented a **DCGAN** for image generation using PyTorch and Ignite on ANIME large dataset with 63,632 high-quality anime faces.
- **Seamless Deployment:** Utilized FastAPI, Docker, Azure, and GitHub Actions to deploy the model, showcasing adeptness in end-to-end Continuous Integration and Continuous Deployment (CICD) pipelines.
- **Skill Proficiency:** Showcased expertise in Generative AI (GenAI), GANs (Generative Adversarial Networks), PyTorch for deep learning, Computer Vision, Docker for containerization, and Azure for cloud deployment.

Human Emotion Prediction (Link)
Computer Vision

- **CNN Architecture:** Achieved 90% emotion prediction accuracy using CNN model & FER dataset. Used Retina library for face extraction, deployed via Flask App.
- **Application:** Addressing the mental health crisis, where 1 in 5 individuals globally suffer from emotional challenges.
- **Skills Proficiency:** Deep Learning, CNN architecture, Image processing, and Flask deployment skills.

IPL Win Prediction (Link)
Regression

- **ANN Architecture:** Constructed an advanced ANN model achieving 98.5% accuracy & 0.035 loss, predicting IPL match winners from 2008-2019 data.
- **Problems addressed: 15% performance variance, 25% inefficiency, 10% lower viewer engagement in IPL.**
- **Skills Proficiency:** Deep Learning, ANN architecture, regression techniques, data preprocessing and Flask deployment.

SKILLS

AI AND MACHINE LEARNING:
Deep Learning, LLM, GenAI, Computer Vision, ChatBot, GANs, NLP, Nueral Networks, Time Series Ananlysis, MLOps, CICD Pipelines, Data Analytics.
TOOLS:
Python, R, Azure, Heroku, Docker, Keras, Tensor Flow, Pytorch, OpenCV, Flask, StreamLit, FastAPI, Langchain, Hugging Face, OpenAI, MySQL, AstraDB, GitHub Actions, Power BI, Postman
PROGRAMMING LANGUAGES:
Python, R, HTML, CSS, JavaScript