Sabba Perween

Linkedin Profile
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PROFILE

A skilled Data Science Engineer with expertise in ML engineering, Deep Learning, NLP, Generative AI, specializing in building and implementing models, data preprocessing, and advanced analytics to solve complex business problems. Proficient in Python. Adept at leveraging Generative AI frameworks and deploying pre-trained LLMs to create intelligent, real-time applications with Streamlit.

EDUCATION

Bachelor of Technology, Computer Science |

Integral University, Lucknow CGPA: 9.7 / 10.0

June 2022 - June 2026

Intermediate (Class XII) |

Urdu Collage, Gopalganj, Bihar *Percentage: 84.8%*

April 2019 - March 2021

SKILLS

- Languages: Python, C, SQL, HTML, CSS, JavaScript.
- Frameworks & Libraries: LangChain, HuggingFace, TensorFlow, Keras, Scikit-learn, Pandas, NumPy, Streamlit, Django.
- **Tools & Platforms:** Ollama, GitHub, Jupyter Notebook, VS Code.
- Core Concepts: Deep Learning (CNN, RNN), Generative AI, NLP, Model Deployment, Feature Engineering, Prompt Engineering, Data Analysis.
- Soft Skills: Problem-Solving, Communication, Collaboration, Attention to Detail, Adaptability.

WORK EXPERIENCE

Python & Al/ML Intern | Centre for Railway Information Systems (CRIS) | Project: Dynamic Al-Powered Form & Data Management Platform | Link

June 2025 – Current

New Delhi

- Engineered a full-stack platform using Django and **Generative AI (LLM)** to dynamically create forms, leveraging a flexible EAV database model to eliminate the need for schema migrations.
- Architected a hierarchical data relationship engine, allowing users to model complex, real-world workflows by creating parent-child links between individual form submissions.
- Developed an automated analytics dashboard using Pandas and Plotly to process submission data and generate interactive visualizations, providing users with immediate data-driven insights.

Technology Stack

- Backend: Python, Django, PostgreSQL.
- Frontend: HTML, CSS, Bootstrap 5, JavaScript.
- Generative Al: Ollama (for serving LLaMA 2).
- Data Analysis & Visualization: Pandas, Plotly Express.
- File Exports: FPDF (for PDF), OpenPyXL (for Excel).
- Development & Version Control: Git, VS Code.

PROJECTS

Conversational RAG PDF Chatbot | Link

Technologies: Python, Streamlit, LangChain, Groq API, ChromaDB, Hugging Face

- Designed a conversational RAG (Retrieval-Augmented Generation) pipeline using **LangChain** to enable users to chat with and query custom PDF documents.
- Implemented a **history-aware retriever** to dynamically reformulate user queries based on conversation history, significantly improving the accuracy of document retrieval for follow-up questions.
- Developed a persistent vector store using **ChromaDB** and Hugging Face embeddings, optimizing performance by eliminating the need to re-process documents across sessions.

Al-Powered Translator (LCEL) with API Deployment | Link

Technologies: Python, LangChain (LCEL), FastAPI, LangServe, Streamlit, Groq API

- Constructed a declarative translation chain using LangChain Expression Language (LCEL) to pipe a prompt template, a high-speed Groq LLM (Llama3), and an output parser.
- Deployed the LCEL chain as a scalable REST API using FastAPI and LangServe, creating a production-ready endpoint for easy integration into other services.
- Improved a separate, interactive web application using **Streamlit** to provide a user-friendly, real-time interface for the translation functionality.

Sentiment Analysis Web Application | Link

Technologies: Python, Streamlit, Scikit-learn, Pandas, TF-IDF, Naive Bayes

- Enhanced and optimized a sentiment classification model using **TF-IDF** and **Naive Bayes**, leveraging **GridSearchCV** for hyperparameter tuning to achieve high predictive accuracy.
- Created a responsive and user-friendly web application with Streamlit to support both single-text input and batch file (CSV/TXT) processing for real-world usability.
- Integrated model performance insights directly into the UI, including accuracy scores, classification reports, and confusion matrices, to provide transparent and interpretable results.

CERTIFICATIONS

Python | IBM | Certificate

Issued April 2024

• Completed a comprehensive course on Python fundamentals provided by the IBM Developer Skills Network, establishing a strong base for advanced programming.

HTML, CSS, and JavaScript | Integral University | Certificate

Issued February 2024

Successfully completed a two-week, value-added course on front-end web development essentials, including HTML5, CSS3, and modern JavaScript.