Rohit Gupta

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Summary — Final year Computer Science undergraduate with strong foundations in DSA, OOPs, and SQL. Experienced in building AI/ML and LLM-integrated solutions using Python and modern AI frameworks. Skilled in developing RAG-based chatbots, AI-driven workflows, and scalable data solutions with version control and agile collaboration experience.

Skills

Languages Python, SQL, C, C++
CS Core OOPs, DBMS, DSA
AI/ML Classification, Regression, NLP, RAG, LLMs, Prompt Engineering Fundamentals
Tools/Libraries TensorFlow, Keras, Scikit-learn, XGBoost, LangChain
Web Dev HTML, CSS, JavaScript
Visualization Matplotlib, Seaborn
Version Control Git
Soft Skills Problem solving, Team player, Fast learner, Effective communicator

Experience

IIT Gandhinagar, Ahmedabad, India **May 2024 – July 2024**
Summer Research Intern

Two Higgs Doublet Model Exploration

- Created 25 large datasets, each containing 500,000 rows, based on the constrained parameter variations within the Two Higgs Doublet Model (2HDM).
- Performed data balancing and extensive feature engineering to handle the large and initially imbalanced dataset.
- Built and trained a neural network architecture applying regularization and dropout techniques to refine parameter constraints within the Two-Higgs-Doublet Model (2HDM), achieving a 15% improvement in accuracy during simulations.
- Prepared a detailed report and visualizations of findings.

JPMorgan Chase & Co. **June 2023 – July 2023**
Agile Virtual Experience Program

- Acquired invaluable insights into teamwork enhancement and communication skill refinement through the agile virtual experience program of JPMorgan Chase & Co.

Education

Kalinga Institute of Industrial Technology (2022 - 2026)
B.Tech in Computer Science and Engineering
CGPA : 8.89

Projects

Conversational ChatPDF Chatbot using LangChain & Groq LLMs

- Developed a RAG-based chatbot in Streamlit to query multiple PDFs with chat history using **LangChain**, **Groq**, **LLaMA3**, and **Ollama** embeddings.
- Utilized **Chroma** for vector storage, implemented session-based memory, and enabled secure, temporary file handling with reset functionality.

Covid Image Classification using Xception Model and Attention Mechanism

- Developed a deep learning pipeline using the Xception architecture combined with an **attention mechanism** for COVID-19 image classification.
- Achieved an accuracy of 97.86% and precision of 96.82%, improving diagnostic performance.
- Implemented data augmentation and transfer learning to enhance model generalization.
- Evaluated the model using confusion matrix, precision-recall curves, and AUC-ROC analysis.

Twitter Sentiment Analysis Project

- Built a sentiment analysis model using LSTM in Keras, achieving 80% accuracy on a dataset of 162,980 tweets.
- Implemented advanced text preprocessing techniques, including tokenization and feature extraction, reducing data imbalance by 30%.