

# Dhruv Mendiratta

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## SUMMARY

Final-year Computer Science student with experience in GenAI systems at EY (LLMs, LangChain, FAISS) and AWS deployment at Deloitte. 3× published AI researcher with strong skills in Python, FastAPI, React, and full-stack AI product development.

## SKILLS

Programming	Python, C, SQL, JavaScript
AI/ML	LangChain, LLMs, FAISS, TensorFlow, Keras, Scikit-learn
Data Tools	Pandas, NumPy, Matplotlib, GARCH
Web & APIs	FastAPI, React, Node.js, REST APIs, PostgreSQL
Cloud & DevOps	AWS (EC2, S3, Lambda), Git, Docker, Jenkins
Other	MongoDB, PowerBI, NLTK, Chart.js

## EDUCATION

### Manipal University Jaipur

*B.Tech in Computer Science and Engineering*

- 2× Student Excellence Award — 3× Published Researcher

Jaipur, Rajasthan  
Sept 2022 – Present

## WORK EXPERIENCE

### Ernst & Young (EY)

*AI Intern, Generative AI & RAG Systems*

- Developed enterprise-grade RAG chatbot using LangChain, FAISS, and Gemini APIs, improving response accuracy by 30%
- Built scalable ingestion and chunking pipelines with embedding optimization for real-time queries
- Integrated prompt workflows with proprietary document stores to automate internal knowledge retrieval and compliance

Delhi, India  
May 2025 – Present

### Deloitte Touche Tohmatsu LLP

*Software Engineering Intern, Cloud Computing (AWS)*

- Completed hands-on training on AWS services including EC2, S3, Lambda, IAM, and CloudWatch
- Practiced real-world deployment scenarios involving cloud architecture, scalability, and security
- Engaged in knowledge-sharing sessions on cloud optimization, infrastructure design, and AWS tooling

Gurugram, Haryana  
May 2024 – July 2024

## PROJECT WORK

### Enterprise RAG Chatbot *LangChain, FAISS, Gemini API, Python*

May, 2025 – July, 2025

- Built an internal enterprise chatbot using RAG (Retrieval-Augmented Generation) for document Q&A
- Integrated vector search (FAISS) and prompt workflows to boost response accuracy by 30%
- Optimized document chunking and embeddings for contextual precision

### Product Sentiment Analyzer (Full-Stack NLP App) *FastAPI, React, NLTK, PostgreSQL*

March, 2025

- Developed a full-stack app to classify user reviews using custom NLP logic and real-time API calls
- Designed a clean React UI with dynamic charts and visual sentiment indicators
- Built preprocessing + storage pipeline with PostgreSQL backend

### Hybrid Stock Price Prediction Model *LSTM, GARCH, TensorFlow, Keras, Python*

January, 2025

- Engineered a hybrid deep learning model combining LSTM (sequential) and GARCH (volatility) networks
- Achieved  $R^2 = 0.9901$ , RMSE = 0.0125 on S&P 500 data using rigorous error analysis
- Submitted findings for publication in peer-reviewed research venues

### Railway Ticketing Chatbot (Rule-Based NLP) *Python, NLTK*

May, 2025

- Created a rule-based chatbot for train ticket booking using keyword mapping and intent classification
- Simulated booking flow with text interface, input validation, and query classification logic

## PUBLICATIONS

**CML 2025:** Skin Disease Detection using CNN+GAN models on ISIC dataset (Accuracy: 96.3%, Grad-CAM used for interpretability)

**ICAESRTA 2K25:** Hybrid BiLSTM-GRU model for S&P 500 forecasting ( $R^2 = 0.9901$ , MAE = 0.0101)

**Journal:** Role of AI in Radiology and Medical Diagnostics – Published in *Cuestiones de Fisioterapia* (2025)

## HONORS & AWARDS

**Student Excellence Award (x2):** For AWS internship at Deloitte and peer-reviewed AI research at Manipal University

**HackX Finalist (2024):** Reached final round of Manipal University's premier hackathon

**Paper Presentations:** Presented at CML 2025 (Skin Disease AI) and ICAESRTA 2K25 (Stock Forecasting)