

NAMAN TIWARI

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[Github](#) • [Linkedin](#)

Third-year B.Tech (Data Science & AI) student who builds and deploys ML and LLM/RAG systems with Python and FastAPI. Seeking an AI/ML or Python backend internship (Delhi NCR on-site/hybrid, or remote).

SKILLS

- **Languages:** Python, C++ (DSA)
 - **LLM & RAG:** LangGraph, LangChain, Pinecone, hybrid search (BM25 + dense), Cohere reranking, Docling, RAGAS evaluation, Whisper
 - **ML & Deep Learning:** PyTorch, scikit-learn, XGBoost, LightGBM, CNNs, transfer learning, Hugging Face Transformers (fine-tuning), imbalanced data (SMOTE), Grad-CAM, SHAP
 - **Backend & Deployment:** FastAPI, REST, WebSockets, Docker, Streamlit, Gradio, Render, Hugging Face Spaces
 - **MLOps & Tools:** MLflow, Weights & Biases, Git/GitHub, Linux
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PROJECTS

[Clinical AI Co-Pilot](#)

[Live Demo](#)

- Built a 5-node LangGraph pipeline (voice/text query, intent routing, hybrid retrieval, cited answer, verification) over patient records, drug guidelines and trial documents; parsed PDFs, lab tables and medical images with Docling.
- Combined BM25, Pinecone dense search and Cohere reranking; enforced per-patient isolation with metadata filters, a patient-scoped BM25 corpus and a post-retrieval guard that drops cross-patient chunks.
- Added a verification step that checks answer numbers against retrieved text and retries once; RAGAS on 40 LLM-generated questions: context precision 0.98, recall 0.87, faithfulness 0.81; deployed on Hugging Face Spaces.

[Voice Shield — real-time voice-clone detection](#)

[Live Demo](#)

- Built a real-time voice-clone detector (FastAPI, WebSockets, fine-tuned AASIST); cut EER from 46.0% to 13.5% on held-out speakers.
- Designed an EMA risk engine and fraud-gate state machine (approve, step-up OTP, freeze) with a simulated banking flow, operator dashboard, audit log and Python SDK.
- Containerised with Docker, deployed on Render, and wrote API tests covering the full call lifecycle.

[Transaction Fraud Detection System](#)

[Live Demo](#)

- Built a pipeline on the Kaggle ULB dataset (284,807 transactions, 0.17% fraud): stratified split, RobustScaler, SMOTE and MLflow-tracked experiments.
- Compared Random Forest, XGBoost, LightGBM and Logistic Regression with and without SMOTE; deployed a tuned Random Forest (AUPRC 0.876, ROC-AUC 0.970) with an F1-optimised threshold and SHAP explanations.
- Built a FastAPI prediction service and a Streamlit analyst dashboard (CSV upload, threshold slider, risk tiers) deployed on Render.

[Crop Disease Detector — ResNet18 & EfficientNet-B0](#)

[Live Demo](#)

- Fine-tuned two CNNs on 15 PlantVillage classes (~20.6k images) with two-phase transfer learning; fine-tuning raised ResNet18 test accuracy from 90.8% to 99.1%; used class-balanced sampling for a 21x imbalance.
- Tracked runs with MLflow, added live Grad-CAM heatmaps to a Gradio app on Hugging Face Spaces, and documented dataset limits (lab backgrounds, possible near-duplicate images).

Additional projects: Neural network from Scratch in NumPy (97.4% on MNIST) • DistilBERT Sentiment Fine-tune on IMDB (93.6% F1, tracked with Weights & Biases)

EDUCATION

Aug 2024 - July 2028

Dr. Akhilesh Das Gupta Institute of Professional Studies (affiliated to GGSIPU) | New Delhi

Bachelor of Technology in Data Science & Artificial Intelligence | CGPA- 9.23/10
