

AYUSH SAXENA

Data Scientist | Machine Learning Engineer | AI Engineer

Kolkata, India | +91-8585064238 | reignofayush@gmail.com

Portfolio: ayush-saxena.dev | GitHub: github.com/DRIFT-619

LinkedIn: linkedin.com/in/ayush-saxena-ml

Summary

MSc Data Science graduate (University of Nottingham) with a Computer Science background specialising in Generative AI and ML Engineering. Experienced in building end-to-end systems, from hybrid RAG pipelines and multi-agent architectures to Deep Learning forecasting systems deployed on AWS. Delivered measurable outcomes with 49% answer relevance improvement in LLM systems, 62.5% latency reduction, 73% recall in risk prediction system and 60% forecasting error reduction in production deployments.

Skills

Programming: Python, C++, R, SQL

GenAI & LLMs: RAG, Multi-Agent Systems, LangChain, LangGraph, LangSmith, Knowledge Graphs, Hybrid Retrieval, Prompt Engineering, Sentence Transformers, Hugging Face Transformers, Ollama (Llama 3)

Machine Learning: Regression, Classification, Clustering, Ensemble Methods, Hyperparameter Tuning, XGBoost, Hypothesis Testing, Model Evaluation, Data Pipelines

Deep Learning: PyTorch, Tensorflow, Keras, LSTM, GRU

Data & Databases: Pandas, NumPy, EDA, Feature Engineering, PCA, Neo4j, PostgreSQL, ChromaDB

MLOps & Deployment: FastAPI, Docker, Git, MLflow, CI/CD (GitHub Actions), AWS EC2, Streamlit, Vercel

Experience

Shaivi Systems

Nov 2023 - Dec 2023

Machine Learning Intern

Pune, India

- Built and evaluated supervised ML models for logistics optimisation using Python, performing preprocessing on noisy operational datasets and reduced prediction error by 5%, reducing operational planning error by 3%.

Formula Student (University of Nottingham Racing)

2024 – 2025

Control Team Member (FSAI)

Nottingham, UK

- Developed and validated throttle control algorithms for an autonomous Formula Student race car, collaborating across perception and control teams ahead of Formula Silverstone 2025.

Projects

Additional projects, including a Bankruptcy risk model, Distributed clustering pipeline, and Train delay prediction system, are available at my portfolio above.

AI Financial Risk Analyst | Python, RAG, Neo4j, LangGraph, LangSmith

- Built an AI-powered financial risk analyzer using Hybrid RAG (ChromaDB) and a Knowledge Graph (Neo4j AuraDB), with a LangGraph multi-agent pipeline to dynamically route queries.
- Improved answer relevance by 49% and reduced response latency by 62.5% (80s to 30s) over baseline RAG through structured graph reasoning and pipeline optimization.
- Deployed via FastAPI and Streamlit, with LangSmith integrated for full pipeline observability and debugging.

Retail Demand Forecasting Pipeline | PyTorch, Tensorflow, MLflow, FastAPI, Docker, AWS EC2, PostgreSQL

- Built an end-to-end forecasting system comparing LSTM/GRU deep learning models against a feature-engineered Random Forest on multivariate retail demand data.
- Random Forest reduced error to an MSE of 897, a 60% improvement over the best LSTM model (MSE 2266), with MLflow tracking every experiment.
- Deployed as a containerized FastAPI service on AWS EC2 with a GitHub Actions CI/CD pipeline for automated builds and deployment.

Education

University of Nottingham

Sep 2024 - Dec 2025

MSc Data Science

Cambridge Institute of Technology

May 2020 - May 2024

Bachelors of Engineering (Computer Science)

Achievements

- **Ranked 1st**, *Train Delay Prediction ML challenge - University of Nottingham, 2025*
- **Ranked 2nd**, *ECG Signal Processing ML challenge - University of Nottingham, 2025*
- **Runner-up**, *Programming Tenacity Boot Camp (C) - Cambridge Institute of Technology, 2022*

Certifications

- Microsoft Azure AI Fundamentals (AI-900) - Microsoft; IBM Data Science & AI Certificate - IBM; Statistics and Machine Learning Certificate - LearnBay