

# Anirudh Malik

ML Engineer — Data Scientist

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## SUMMARY

I am a Scientific Software Engineer and Data Scientist with a robust background in AI product development, MLOps, and cloud deployment. I possess strong skills in Python, SQL, and C++, as well as familiarity with frameworks like TensorFlow and PyTorch. I am committed to building scalable ML pipelines and solving complex real-world problems in science and computation.

## EXPERIENCE

**AI/ML Specialist** *Imagenators*  
**Noida** **05/2025 – Present**

- Built a RAG-based alumni chatbot using Ollama + Mistral, LangChain, Django, and ChromaDB
- Benchmarked GenAI vs classical NLP for accurate information retrieval

**Trainee Developer** *Dev Group*  
**New Delhi** **02/2025 – 05/2025**

- Prototyped AI tools using Python, REST APIs, and LangChain
- Developed a CO<sub>2</sub> emission estimator using Flask, Pickle, MLFlow on AWS

**Research Associate** *IIT Delhi*  
**Delhi, India** **04/2025 – Present**

- Simulated  $gg \rightarrow H \rightarrow \tau^+ \tau^-$  using MadGraph5, Pythia8, and Delphes
- Optimized selection cuts with ROOT and Python for background rejection

**Graduate Researcher** *University of Sheffield, UK*  
**Sheffield, UK** **09/2023 – 09/2024**

- Built PICNN classifiers for  $Z \rightarrow e^+ e^-$  using ATLAS MC data
- Applied Optimal Transport to match AF3 and Geant4 simulations

**Undergraduate Researcher** *University of Delhi*  
**Delhi, India** **09/2022 – 05/2023**

- Simulated surface plasmon resonance (SPR) via DDSCAT
- Studied dielectric, piezoelectric behavior of AgNO<sub>3</sub> nanomaterials

## EDUCATION

**MSc in Particle Physics** *University of Sheffield, UK*  
**09/2023 – 09/2024** **First Division**

**BSc in Physical Science** *University of Delhi, India*  
**09/2020 – 09/2023** **Distinction**

**Senior Secondary, ISC** *Mount Carmel School*  
**09/2018 – 09/2020** **94%**

## KEY ACHIEVEMENTS

### Alumni Chatbot Development – Freelanced

Successfully developed and deployed an innovative alumni chatbot that enhances user interactions.

### High-Energy Physics Simulation

Contributed to advanced simulations in high-energy physics which enhance deep learning algorithms.

## SKILLS

- Python (NumPy, Pandas, Scikit-learn)
- PyTorch, TensorFlow
- Bash Scripting (Linux)
- Apache Airflow and Spark
- MLflow, MLOps
- REST APIs, Flask
- AWS (EC2, Lambda)
- Kubernetes, Docker
- Git, GitHub, GitLab
- PostgreSQL, MongoDB, Oracle
- Matplotlib, Seaborn
- C/C++, CUDA
- SQL, Streamlit
- NLP, Transformers

## PROJECTS

### 3D Schrödinger Solver

- Solved 3D time-independent Schrödinger equation and benchmarked CPU vs GPU

### Retail Sales Forecasting

- ML pipeline with Airflow, MLFlow, Flask; deployed on AWS

### Fraud Detection System

- Spark-based fraud detection system using AWS Lambda

### YouTube Comment Analysis

- Built a transformer-based sentiment classifier

## INTERESTS

- Statistical modeling and data-driven decision making
- Generative AI, LLM applications, and prompt engineering
- Building scalable ML systems and MLOps pipelines
- Data visualization and storytelling with data
- Developing AI tools for automation and intelligent systems

## CERTIFICATIONS

- Data Science, ML, DL, NLP
- Mastering SQL & Analytics
- MLOps Bootcamp, DL Specialization
- Python for Data Analytics

## LANGUAGES

English — Professional

Hindi — Native