

Aayush Chauhan

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Education

Faculty of Technology, University of Delhi

Bachelor of Technology in Electronics and Communication Engineering

Minor in Artificial Intelligence & Machine Learning

Relevant Coursework: Deep Learning, Signal & Image Processing, Data Analytics, Probability & Statistics

Delhi, India

Expected May 2027

CGPA: 8.03 / 10.00

Professional Experience

Vectura Fertin Pharma

Sales & Marketing Executive

Drove a **15%** market penetration increase and a **30%** uplift in customer engagement by developing data-driven strategies and analyzing user feedback for the "Tobacco-Free India" initiative.

Noida, India

Summer 2024

Projects

BetrayalNet - Deception Detection in Diplomacy [\[GitHub\]](#)

PyTorch, Transformers, NLP, Game Theory

Built a **hybrid neural model** for detecting deception in multi-agent dialogue under extreme class imbalance (**<5% positives**), combining frozen BERT embeddings with **game-theoretic strategic proxies**. Achieved **Macro F1 = 0.5847**, outperforming RL-based baselines, and enabled **sub-second inference** using ensemble bagging without costly simulations.

SAM AI - Smart Shopping Assistant [\[GitHub\]](#)

Python, FastAPI, LLM, NLP, TTS/STT, Fuzzy Matching

Developed the core backend for an **AI-powered shopping assistant** with features like intelligent product search and recommendation, fuzzy matching, sustainable alternatives recommendation, recipe suggestions, and LLM-based intent recognition. Integrated text-to-speech and speech-to-text for a fully voice-interactive experience.

HaritaX - Plant Disease Classifier [\[GitHub\]](#)

PyTorch, TensorFlow, CNN, Vision Transformer

Engineered a novel deep ensemble model combining VGG16, ResNet50, ViT, and Swin Transformer with feature-level fusion. Achieved **99.76% accuracy** on the PlantVillage dataset, outperforming state-of-the-art benchmarks.

Saferoad AI - Real-Time Accident Detection [\[GitHub\]](#)

YOLOv8, OpenCV, Computer Vision

Developed and trained a YOLOv8 model on a custom video dataset for real-time crash detection from live CCTV feeds. Integrated OLA Maps API to automatically dispatch alerts to nearby hospitals, aiming to reduce emergency response times.

Research & Publications

Cracking the Code of Spotify Hits

Under Review

Analyzed 40K+ tracks; engineered PCA-based features and optimized a Random Forest model, achieving **83.17% accuracy** and highlighting the impact of temporal data segmentation.

Deep Learning for Malware Analysis and Classification

Book Chapter (In Press)

Examines malware evolution and limitations of traditional methods; demonstrates how **deep learning** enables scalable, adaptive, and automated **malware detection** from raw data.

Technical Skills

- Languages & Markup:** Python, C++, SQL, HTML/CSS, \LaTeX
- ML/DL Frameworks:** PyTorch, TensorFlow, Scikit-learn, OpenCV, HF Transformers
- Data Science & Visualization:** Pandas, NumPy, Matplotlib, Seaborn
- Platforms & Tools:** Git, Docker, Vector DBs, Flask, Streamlit, REST APIs, Google Cloud
- Engineering Simulation:** MATLAB, Simulink, CST Studio Suite, Ansys HFSS

Achievements & Certifications

- Hackathon Winner:** D3 Hackathon, Amity University, Noida and HackLLM, IIIT Delhi.
- NITORI Scholarship (2024-25):** Awarded for outstanding academic excellence.
- Machine Learning Specialization:** Stanford University (Coursera)
- Computer Vision & Python for DS/AI Certifications:** IBM (Coursera)