

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

Delhi, India

Expected May 2027

CGPA: 8.03 / 10.00

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

Professional Experience

Vectura Fertin Pharma

Sales & Marketing Executive

Noida, India

Summer 2024

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.

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.

Publications

Cracking the Code of Spotify Hits [\[DOI\]](#)

SMART, 2025

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 (De Gruyter Brill, 2026)

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, L^AT_EX
- 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)