

MRIDUL BATRA

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EDUCATION

Thapar Institute of Engineering and Technology, Patiala

Aug 2023 – Jul 2027

Bachelor of Engineering in Computer Science and Engineering — CGPA: 8.59/10

Saini Fateh Convent School, Bathinda

Apr 2021 – May 2023

Class XII — 92.4%

TECHNICAL SKILLS

Languages: Python, JavaScript, C++, C, HTML, CSS

AI / ML: Machine Learning, Deep Learning, NLP, RAG, TensorFlow, scikit-learn, LangChain, FAISS, Gemini API

Frameworks & Libraries: React, Node.js, Express, pandas, NumPy

Databases: MongoDB, SQL

Developer Tools: Git, GitHub, Tableau, VS Code, Streamlit

CS Fundamentals: Data Structures & Algorithms, OOP, Operating Systems, DBMS, Computer Networks, SDLC

EXPERIENCE

Indian Institute of Computing & Technology — AI & ML Intern

Jun 2026 – Jul 2026

- Developed 2 NLP pipelines for fake-news and phishing detection using **Python, scikit-learn, and TF-IDF**.
- Trained and evaluated 4+ ML models, including **Random Forest** and **Neural Networks**, optimizing classification metrics.
- Executed end-to-end data workflows from text preprocessing to model evaluation over a **45-day AI/ML program**.

PROJECTS

Autoencoder Fraud Detection

Mar 2026

Python, TensorFlow, scikit-learn, Streamlit

- Designed an **Autoencoder-based fraud detection model** on **284K+ credit card transactions**, detecting anomalies via reconstruction error.
- Achieved **93%+ fraud recall** with **<5% false positives** on a highly imbalanced dataset (**0.17% fraud**) using precision-recall threshold tuning.
- Deployed an interactive **Streamlit dashboard** for CSV upload, real-time fraud prediction, and anomaly score visualization.

AI Document Intelligence System

Feb 2026

Python, LangChain, FAISS, Gemini API

- Built a **RAG document Q&A pipeline**, chunking PDFs into **768-dim embeddings** with **20% overlap**.
- Added **context-aware follow-ups** by reformulating queries using the **last 2 conversation turns**.
- Implemented **3-attempt API retry handling** with **15/30/45s backoff** to handle Gemini rate limits and improve query reliability.

Retail Sales Analytics & Performance Dashboard

Jan 2026

SQL, Python, pandas, Tableau

- Analyzed **100K+ transactions** using **SQL (CTEs, joins)** and **pandas**, computing MRR, AOV, and churn metrics.
- Created an interactive **Tableau dashboard**, reducing reporting time by **70%** and surfacing **top 3 revenue categories**.
- Delivered actionable insights pinpointing **2 underperforming zones**, guiding stakeholder resource reallocation.

LEADERSHIP & ACTIVITIES

Team Member, ACM Student Chapter

Aug 2023 – May 2025

- Organized **coding contests & tech talks** with **750+ participants**, strengthening the student community.
- Contributed to **2+ open-source projects**, fostering collaboration and software innovation.

ACHIEVEMENTS & CERTIFICATIONS

- Merit Scholarship Awardee** for academic excellence at Thapar Institute of Engineering and Technology.
- Oracle Cloud Certified** — AI Foundations Associate (2025).
- Completed **Udemy Full-Stack Web Development** certification.