

EDUCATION

Punjab Technical University (PTU) – Kapurthala, Punjab
Bachelor of Technology in Computer Science Engineering

May 2027
SGPA: **8.74/10**

Relevant Coursework: Machine Learning, Artificial Intelligence, Data Structures & Algorithms, DBMS, Computer Networks

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, SQL

ML & Data: NumPy, Pandas, scikit-learn, Matplotlib

Frameworks: FastAPI, React.js, Node.js

Databases & Tools: Git, GitHub, MongoDB, MySQL, Redis

PROJECTS

Helmet Detection System

Github

Python, YOLOv8, OpenCV, FastAPI, PyTorch

- Developed a real-time helmet detection system using YOLOv8, applying Computer Vision for traffic safety monitoring.
- Built and deployed a FastAPI-based backend to process image inputs and return annotated predictions.
- Optimized inference pipeline for efficient real-time detection performance.

NanoGPT – Transformer Implementation

Github

Python, PyTorch, Transformer Architecture

- Implemented a transformer-based language model inspired by Andrej Karpathy to understand generative AI architectures.
- Built core components including embeddings, self-attention, and autoregressive text generation using Machine Learning.
- Generated coherent text sequences and analyzed training dynamics using loss curves and sampling strategies.

Fake News Detector

Live Demo

Python, scikit-learn, BERT, NLP, Streamlit

- Built a fake news classification system using Natural Language Processing with TF-IDF and transformer-based models (BERT).
- Compared multiple models (Logistic Regression vs BERT) achieving improved accuracy and generalization.
- Deployed a Streamlit-based interface for real-time prediction with confidence scores and interpretability.

Credit Card Fraud Detector

Live Demo

Pandas, Scikit-learn, SMOTE

- Developed a machine learning-based fraud detection system using Python for real-world financial data
- Implemented anomaly detection, feature engineering, and data balancing to handle class imbalance
- Analyzed model performance using precision, recall, and F1-score for security analytics research

For an exhaustive list of projects, please refer [Project Portfolio](#)

EXPERIENCE

Open Source Contributor – GirlScript Summer of Code (GSSoC), New Delhi

July 2025 – Nov 2025

- Improved UI performance by refactoring React components, reducing unnecessary re-renders.
- Collaborated via GitHub PRs with distributed teams ensuring scalable code structure.

Full-Stack MERN Trainee – Excellence Technology, Chandigarh

June 2025 – Aug 2025

- Reduced API response time by 15% through optimized MongoDB queries.
- Built real-time chat system using Socket.io and video streaming platform using WebRTC.

RESEARCH INTERESTS

- Machine Learning, Natural Language Processing
- Computer Vision, Distributed Systems
- Transformer-based models and generative AI

LEADERSHIP

Team Lead – University Hackathon (CodeX)

Nov 2025 – Present

- Led a team of 4–5 members to architect and deliver a project under strict time constraints, overseeing task allocation, debugging, and final presentation.

Volunteer – National Service Scheme (NSS)

Aug 2023 – Present

- Participated in community outreach initiatives, contributing to social awareness drives and collaborating on local development programs.

ACHIEVEMENTS

- Solved **350+ DSA problems** on LeetCode & GeeksForGeeks, strengthening problem-solving and algorithmic thinking.
- Ranked in the **Top 10%** of the class based on consistent academic performance.
- Awarded the **FC Sondhi Scholarship** for outstanding academic excellence and securing top rank in school.