Rakshita Makkar

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EDUCATION

Vellore Institute of Technology　　　　　　　　　　　　　　　　　　　　May 2026 (Expected)
BTech Computer Science Engineering | CGPA: 8.58/10

PROJECTS

AQI PREDICTION SYSTEM　　　　　　　　　　　　　　　　　　　　　　Mar 2025 - Jun 2025
Role: Lead Developer | Technologies: Python, Machine Learning, Deep Learning
- Developed an end-to-end time-series AQI prediction system using Transformer, LSTM, GRU, Dense Neural Networks, achieving ~80% accuracy.
- Implemented data preprocessing, feature engineering, model training, evaluation, and optimization pipelines for large environmental datasets.

CASCADE - A GENAI STUDY COMPANION SOFTWARE　　　　　　　　　　Jan 2024 – Apr 2024
Role: Lead Developer | Technologies: Python, PyQT, LLM, MySQL
- Built a GenAI-powered personalized learning platform using LLMs to analyze user behavior, schedules, and preferences, improving efficiency by ~50%.
- Designed a full-stack desktop application with MySQL, integrating productivity tools and an AI chatbot for adaptive recommendations.

ERADIKET – ONE STOP PLATFORM FOR DATA MANAGEMENT　　　　　Apr 2023 – Sep 2023
Role: Developer | Technologies: Python, AES, ChaCha 2.0, Cybersecurity
- Engineered a secure data management system with system validation, permanent data deletion, and encrypted file storage.
- Implemented AES and ChaCha 2.0 encryption algorithms with 128/196/256-bit key management to ensure data security and privacy.

EXPERIENCE

Manav Rachna International Institute of Research and Studies | ML Intern　　Oct 2024 - Dec 2024
- Led the end-to-end ML research pipeline for Parkinson's speech analysis—feature extraction, model training, cross-validation, evaluation, and results interpretation.
- Built and evaluated models using scikit-learn, LibROSA, NumPy, Pandas, with hands-on exposure to TensorFlow for neural network experimentation and deep learning prototyping.
- Performed acoustic feature extraction and feature engineering achieving up to ~90% model performance.

CONFERENCE PRESENTATIONS

Global AI Summit 2025 – International Conference on Artificial Intelligence and Emerging Technology 2.0, Bennett University, India, Presenter (technically co-sponsored by IEEE UP Section)　　Nov 2025
- Presented research paper "Machine Learning-Based Acoustic Feature Analysis for Early Detection of Parkinson's Disease", focusing on ML models and speech signal features.

TECHNICAL SKILLS

Languages: Python, Java, HTML, CSS, Javascript, LaTex
Frameworks: PyTorch, OpenCV, Numpy, Pandas, Scikit-learn, TensorFlow
Data/Tools: MySQL, Git, MS Office, MS Excel, Canva, Figma
Core Subjects: Operating Systems, Computer Networks, Cloud Computing, Machine Learning, DBMS, Software Engineering
Certifications: Agile Project Management – HP Life | Issued: December 2025
Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate – Oracle | Issued: October 2025
The Bits and Bytes of Computer Networking - Google | Issued: December 2023
Supervised Machine Learning: Regression and Classification – Stanford University and DeepLearning.AI | Issued: July 2023

EXTRACURRICULAR

CyberWarriors club | Design Team Lead　　　　　　　　　　　　　　　Oct 2024 – Aug 2025
Lead a design team of six members within the CyberWarriors club, delivering eight impactful design projects, and completing 100% of all design requests by project deadlines.