Mahak Dwivedi

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Education

Vellore Institute of Technology, Bhopal Nov 2022 – Present
Integrated M.Tech in Computer Science and Engineering (Computational and Data Science)
CGPA: 8.32 / 10

Govt. Model H.S. School, Madhya Pradesh May 2022
Class XII (MPBSE) – 90.2% (1st in District)

Govt. Model H.S. School, Madhya Pradesh May 2020
Class X (MPBSE) – 90%

Technical Skills

Programming: C++, Python, SQL
Machine Learning: Scikit-learn, TensorFlow, Isolation Forest, Prophet (Time-Series Forecasting), LSTM, Pandas, NumPy
Backend & Web: Express.js , HTML, CSS, JavaScript.
Databases: MongoDB
Integrations: Gemini API

Projects

AI-Powered API Monitoring Anomaly Detection System

- Designed and implemented an AI-powered API monitoring system integrating OpenTelemetry and Grafana stack (Loki, Tempo, Mimir) for real-time observability across distributed services.
- Built an Isolation Forest–based anomaly detection engine to identify latency spikes, error rate anomalies, and abnormal traffic patterns.
- Developed a Prophet forecasting pipeline to predict traffic trends and potential system failures for proactive alerting.
- Automated incident response using Twilio phone alerts and AI-generated Root Cause Analysis (RCA) reports, reducing manual debugging effort.

AI Loan Approval System *Code*

- Built an AI-driven loan approval system using Python, Flask, and Scikit-learn to automate customer eligibility decisions.
- Trained and deployed ML classification models for real-time credit risk prediction with improved accuracy.
- Optimized data preprocessing, feature engineering, and model pipelines to enhance reliability and performance.
- Integrated the trained ML model into a full-stack web application for instant, user-friendly decision making.

AI-Based Smart Garbage Monitoring System

- Developed an intelligent waste monitoring system to track garbage fill levels and prevent overflow in urban areas.
- Utilized image processing and sensor-based techniques for real-time waste level detection and analysis.
- Implemented automated alert generation to notify authorities upon threshold breaches.
- Designed route optimization logic to improve waste collection efficiency and reduce operational costs.

Certifications

- **NPTEL:** Introduction to Machine Learning *View*
- **Coursera:** Applied Machine Learning in Python *View*
- **Ethnus:** MERN Full Stack with AI Internship Program *View*

Achievements

- Awarded **Dream STAR Scholarship** at VIT Bhopal (Top 5% of batch).
- Secured **1st Position in District Merit** in Class XII (MPBSE).

Experience

Core Member — Data Science & Cloud Computing Club

- Active core member contributing to technical events, workshops, and collaborative projects.

Additional Information

Languages: English (Fluent), Hindi (Native)
Hobbies: Singing, Photography, Competitive Coding