

# Mahak Dwivedi

✉ codingwithmahak@gmail.com

☎ +91-6266051193

🌐 LinkedIn

🐙 GitHub

## 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, JavaScript (Node.js), SQL

**Machine Learning:** Scikit-learn, TensorFlow, Isolation Forest, Prophet (Time-Series Forecasting), LSTM, Pandas, NumPy

**Backend & Web:** Express.js, Flask, REST APIs, Microservices Architecture, HTML, CSS, JavaScript

**Observability & Monitoring:** OpenTelemetry, Grafana, Loki, Tempo, Mimir, Prometheus

**DevOps & Tools:** Docker, Docker Compose, Git, GitHub, Linux, VS Code

**Databases:** MongoDB

**Integrations:** Twilio API, 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