EmergeFlow
SMALL DIFFERENCE. LARGE IMPACT.

Case study:

AI enabled Real-Time CCTV-Based Vehicle Tracking and Automation

Client Background

The client is a factory-based organization engaged in the supply of construction materials such as stones, pebbles, and sand. The factory handles frequent movement of trucks and other vehicles for material delivery and dispatch. To support daily operations, the organization maintains gate-level monitoring and vehicle movement records.

NEED OF THE CLIENT

The client required an automated system to track all incoming and outgoing vehicles at the factory gate.

The existing manual process relied on a gate security person to observe CCTV footage, identify vehicle types, note number plates, record entry and exit times, and calculate how long each vehicle stayed inside the factory. This approach was time consuming, error-prone, and inefficient during high-traffic periods.

The client wanted to eliminate manual tracking, improve accuracy, and automatically register vehicle

movement data in Excel.

BEFORE AUTOMATION

Before automation, a security personnel was stationed at the factory gate to manually record vehicle details such as vehicle type, number plate, entry time, and exit time.

The same vehicle had to be identified again at the time of exit to calculate the total duration of stay. All records were maintained manually and later entered into Excel.

This process required continuous human monitoring, was prone to missed entries and Incorrect calculations, and slowed down overall gate operations.

AFTER AUTOMATION

After implementing automation, live CCTV camera footage is continuously monitored in real time. The system automatically detects incoming and outgoing vehicles, identifies vehicle types, and extracts number plates using AI-based computer vision. Entry and exit time stamps are captured automatically, and the system matches the same vehicle during exit to calculate the total time spent inside the factory.

All vehicle movement details are automatically logged and registered into Excel without any manual intervention. This automation significantly improved accuracy, reduced manual effort, ensured reliable tracking, and enhanced overall operational efficiency.