VeeScan – AI-Powered Real-Time Surveillance for Person Identification and Tracking

Project Description

Problem Statement

In densely populated urban areas, tracking and locating suspected criminals or missing individuals in real-time poses a significant challenge for law enforcement agencies. Traditional surveillance systems are passive and rely heavily on manual monitoring, which is time-consuming, error-prone, and resource-intensive. The lack of intelligent, automated surveillance makes it difficult to respond swiftly in time-sensitive situations such as identifying a suspect on the move or locating a missing person in a crowded public space.

Proposed Solution

VeeScan is an AI-powered surveillance software that enhances existing CCTV infrastructure with intelligent person detection and tracking capabilities. The system allows authorities to upload a photo of a person of interest (suspect or missing person). Once activated, the system uses facial recognition technology to continuously scan live camera feeds from multiple CCTV cameras—interconnected across a large geographical area.

If the individual is detected in any of the video streams, the system immediately alerts the concerned authorities with:

- The camera ID and location

- The timestamp of the detection

- A snapshot and confidence level of the match

This real-time alert mechanism significantly enhances the efficiency and responsiveness of public safety operations.

Key Features

- Upload and manage photo profiles of persons of interest

- Real-time face recognition across multi-camera networks

- Alert system with live location and detection timestamp

- Dashboard for centralized monitoring and event logs

- Scalable to large cities or confined zones (airports, malls, stations)

Technologies & Tools

Computer Vision and AI

- **Face Detection & Recognition**: DeepFace
- **Facial Matching**: Pre-trained deep learning models
- **Custom Model Training**

Edge Device Support (Optional, if needed for real-time on-device inference)

- NVIDIA Jetson / Coral Edge TPU
- Qualcomm Snapdragon X Elite for on-device AI

Cloud / DevOps

- AWS / Azure (optional cloud deployment)
- Docker for containerization
- GitHub / GitLab for version control

Potential Use Cases

- Law enforcement agencies to track criminal suspects
- Missing person detection in public spaces
- Enhanced security in airports, bus/train stations, and event venues
- Corporate or campus security surveillance