Team Name:

Sentinel AI

Project Title:

SecureVision - Smart AI Assistant for Real-Time Surveillance

Short Description:

SecureVision is an AI-powered surveillance system that uses computer vision and voice intelligence to monitor CCTV feeds, detect anomalies, and provide real-time alerts and access control through facial or voice authentication.

Problem Statement:

Traditional surveillance systems require manual monitoring, which is both inefficient and prone to human error. Furthermore, they lack intelligent response mechanisms, leading to delayed actions during intrusions or suspicious activity. There is a growing need for smart, real-time, and autonomous surveillance that reduces human workload while increasing response efficiency.

Proposed Solution:

SecureVision will act as a smart AI security assistant that can:

- **Continuously monitor CCTV feeds**
- **Detect unusual motion or human activity using AI models**
- **Recognize registered faces (staff/residents)**
- **Alert the user on detecting intruders or unknown faces**
- **Allow gate/door unlocking via facial or voice authentication**

- **Log all events with timestamps for auditing**

Target Users:

- **Schools, colleges, or university campuses**
- **Apartment buildings and housing societies**
- **Banks, data centers, or offices**
- **Remote surveillance for homes**

Core Technologies Used:

- **Python as base language**
- **OpenCV for real-time video feed processing**
- **YOLOv8 / Haar Cascades for motion detection and human identification**
- **Face Recognition (dlib or face_recognition) for identity verification**
- **SpeechRecognition + Pyttsx3 for voice commands and authentication**

- **Twilio / Email API for instant alerts**
- **Optional: Flask or Tkinter for GUI/ dashboard**

Unique Features:

- **Real-time monitoring with anomaly detection**
- **Facial recognition-based access control**
- **Voice authentication for remote command**
- **Smart alerts via SMS/email (if unauthorized activity detected)**
- **Logs and image captures stored for review**

What Will Be Built During the Hackathon (MVP):

- **Live video feed monitoring from webcam/CCTV**
- **Real-time face detection & recognition**
- **Motion detection system with alert**

- **Voice-controlled access simulation**
- **Alert system via console, popup, or email**

Team Members & Roles:

- **Mritunjay Shah – AI & Computer Vision Developer**
- **Maheshwor Pant – Backend Engineer (Alert System, APIs, Logging)**
- **Subash Thakur – Integration, Testing & Presentation/UI**

Future Scope:

- **Integration with existing CCTV/NVR systems**
- **Use of deep learning models for behavior prediction**
- **Full mobile app for remote monitoring**
- **Integration with IoT devices (e.g., auto-locking doors, alarm systems)**

- **Cloud-based storage and remote login for live monitoring**