Face Recognition Attendance System

Submitted on: June 14, 2025

1. Introduction

This project presents a Face Recognition Attendance System using Python. The goal is to automate attendance recording using facial recognition, replacing manual methods that are time-consuming and error-prone. The system detects and recognizes faces in real-time using a webcam and marks attendance automatically.

2. Libraries Used

- OpenCV: For image processing and capturing video stream.

- face_recognition: To recognize and compare faces.

- numpy: For array manipulations.

- datetime: To record date and time of attendance.

- os: For file and directory handling.

3. How It Works

1. Load and encode known faces from a folder.

2. Start webcam and capture frames in real-time.

3. Detect faces in the current frame.

4. Compare detected faces with known encodings.

5. If a match is found, mark attendance with timestamp in a CSV file.

6. Avoid marking duplicate entries within the same session.

4. Features

- Real-time face recognition from webcam.

- Automatic attendance logging.

- CSV-based attendance records.

- Easy to add new users by adding their images to the 'images' folder.

5. Conclusion

The Face Recognition Attendance System provides a simple, efficient, and contactless method for attendance management. It can be further enhanced with features like database integration, GUI dashboard, and facial spoofing protection.