

Face Recognition Based Smart Attendance System

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ABSTRACT: In this digital era, face recognition system plays a vital role in almost every sector. Face recognition is one of the mostly used biometrics. It can be used for security, authentication, identification, and has got many more advantages. Face recognition system can also be used for attendance marking in schools, colleges, offices, etc. This system aims to build a class attendance system which uses the concept of face recognition as existing manual attendance system is time consuming and cumbersome to maintain. And there may be chances of proxy attendance. Thus, the need for this system increases. This system consists of four phases: database creation, face detection, face recognition, attendance updating. Database is created by the images of the students in class. Face detection and recognition is performed using HaarCascade classifier and Local Binary Pattern Histogram algorithm respectively. Faces are detected and recognized from live streaming video of the classroom. Attendance will be mailed to the respective faculty at the end of the session. It is biometric technology to identify or verify a person from a digital image or surveillance video. Face recognition is widely used nowadays in different areas such as universities, banks, airports, and offices. We will use pre-processing techniques to detect, recognize and verify the captured faces like Eigenfaces method. We aim to provide a system that will make the attendance process faster and more precisely.

KEYWORDS: haar Cascade Classifier, LBPH algorithm

I. INTRODUCTION

In this paper Facial recognition is a way of identifying or confirming an individual's identity using their face. Facial recognition systems can be used to identify people in photos, videos, or in real-time. Face recognition is the identification of

human by the unique characteristics of their faces. face recognition technology is the least intrusive and fastest bio-metric technology.

Facial recognition is a category of biometric security. Other forms of biometric software include voice recognition, fingerprint recognition, and eye retina or iris recognition. The technology is mostly used for security and law enforcement, though there is increasing interest in other areas of use.

Face Recognition is a recognition technique used to detect faces of individuals whose images saved in the data set. Despite the point that other methods of identification can be more accurate, face recognition has always remained a significant focus of research because of its non-meddling nature and because it is people's facile method of personal identification.

II. EXISTING SYSTEM

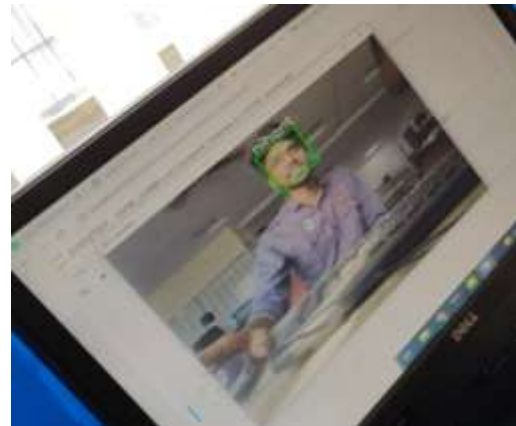
Signature based System

Speaking about manual attendance systems, these are traditional systems that require employees to fill in their attendance sheets manually. These are generally used by small scale companies where there is less number of employees. However, such attendance systems require fair and consistent execution. Besides, HR managers face enormous pressure when it comes to collecting details about employees' working hours with these systems.

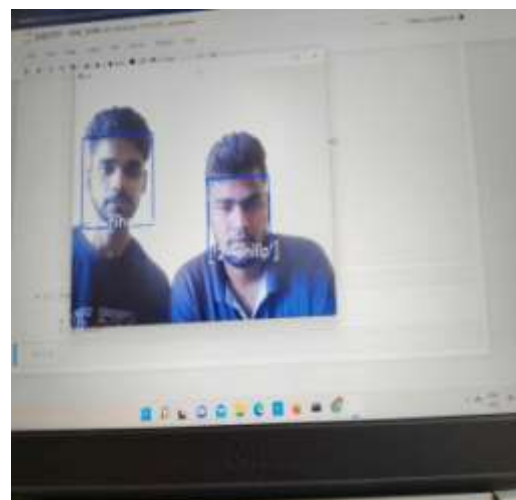
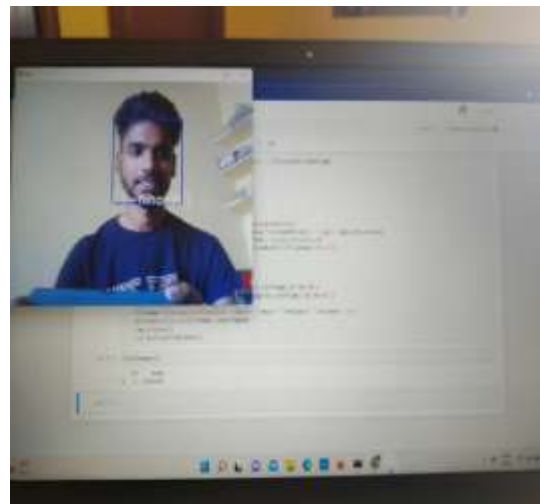
Fingerprint based System

In commonly used biometric time and attendance systems, a fingerprint scan of an individual becomes the unique code of entry into or exit from the workplace. Biometric scans of irises (got by scanning the eye), faces, typing cadence, voices, etc., are also used to create unique patterns for individuals that cannot be replicated in any manner whatsoever by another individual.

III. MODELING AND ANALYSIS



Result of face recognition from a live video



Faces are recognized

IV. RESULTS AND DISCUSSION

The project “face recognition-based attendance system” is implemented successfully.



Output of list of images and encoded images displayed in folder



Mail sent when an unauthorized person entered into the class



Attendance is updated in the excel sheet

V.CONCLUSION

The primary goal is to help the lecturers, improve and organize the process of track and manage student attendance and absentee. Provides a valuable attendance service for both teachers and students.

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