SYNOPSIS

ON

Face Recognition

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INTRODUCTION

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. Facial recognition is a category of biometric security.

Face recognition is one of the few biometric methods that possess the merits of both high accuracy and low intrusiveness. It has the accuracy of a physiological approach without being intrusive. face recognition has drawn the attention of researchers in fields from security, psychology, and image processing, to computer vision. While network security and access control are it most widely discussed applications, face recognition has also proven useful in other multimedia information processing areas.

EXISTING SYSTEM

There are lot of systems of face recognition in market like

1.AppLock:

This is one of the free face tracking software that ensures that only a user can access their personal information, social media apps, and financial accounts.

2.FaceApps:

This is an ancestry facial recognition app. Among the mobile applications, it is one of the most advanced face apps online, as it takes the facial profile of one person and calculates the unique facial points in a row. The facial recognition app then compares them to another person to see if those two people could probably be related.

So How this project Works. The system works on face recognition where each student in the class is photographed and their details are stored in a server. The teacher can then record the attendance by just clicking some pictures of the classroom. The system will recognize the faces and verify the presence or absence of each student.

Feasibility of Project

Operational feasibility:

Operational feasibility is the measure of how well a proposed system solves the problems with the users. Operational feasibility is dependent on human resources available for the project and involves projecting whether the system will be used if it is developed and implemented. The project is operationally feasible for the users as nowadays almost all the teachers/staffs are familiar with digital technology.

Technical feasibility:

Technical feasibility is carried out to determine whether the project is feasible in terms of software, hardware, personnel, and expertise, to handle the completion of the project. It considers determining resources for the proposed system. As the system is developed using python, it is platform independent. Therefore, the users of the system can have average processing capabilities, running on any platform. The technology is one of the latest hence the system is also technically feasible

Economic feasibility:

This is a small project with no cost for development. The system is easy to understand and use. Therefore, there is no need to spend on training to use the system. This system has the potential to grow by adding functionalities for students as well as teachers. This can Hence, the project could have economic benefits in the future.

USE OF THE PROJECT

This technology is no longer seen as something out of science fiction movies like Minority Report. With the release of the iPhone X, millions of people now literally have face recognition technology in the palms of their hands, protecting their data and personal information. While mobile phone access control might be the most recognizable way face recognition is being used, it is being employed for a wide range of use cases including preventing crime, protecting events and making air travel more convenient.

A.Prevent retail crime

Face recognition is currently being used to instantly identify when known shoplifters, organized retail criminals or people with a history of fraud enter retail establishments. Photographs of individuals can be matched against large databases of criminals so that loss prevention and retail security professionals can be instantly notified when a shopper enters a store that prevents a threat.

A. Unlock phones

A variety of phones including the latest iPhone are now using face recognition to unlock phones. This technology is a powerful way to protect personal data and ensure that, if a phone is stolen, sensitive data remains inaccessible by the perpetrator.

B. Find missing person

Face recognition can be used to find missing children and victims of human trafficking. As long as missing individuals are added to a database, law enforcement can become alerted as soon as they are recognized by face recognition—be it an airport, retail store or other public space.

FUNCTIONAL SPECIFICATION

The functional requirements have been gathered from the user story developed from the minutes collected during meetings with the client and are outlined here.

Capture face images via webcam or external USB camera.

- A professional HD Camera
- Faces on an image must be detected.
- The faces must be detected in bounding boxes.
- Compute the total attendance based on detected faces.
- Crop the total number of faces detected.
- Resize the cropped faces to match faces the size required for recognition.
- Store the cropped faces to a folder.
- Load faces on database.
- Train faces for recognition.
- Perform recognition for faces stored on database.
- Compute recognition rate of the system.
- Perform recognition one after the other for each face cropped by Face Detector.
- Display the input image alongside output image side by side on the same plot.
- Display the name of the output image above the image in the plot area

Software Specification:

- Technology Implemented:
  biometrics to map facial ,
  used OpenCv library.
- Language Used: Python
- Database: MySql
- User Interface Design: Graphical user interface
- Web Browser: chrome

Hardware Requirements:

- Processor : intel Pentium processor or other 1GHz or more
- Operating System : window 7 or above , linux, mac os x
- RAM : minimum 128MB RAM or above
- Hardware Devices: minimum 32MB graphic card RAM or above
- Hard disk : space of 500GB or above

FUTURE SCOPE

There is a huge scope of this technology in World and it can help improve the country security in various aspects. The technology and its applications can be applied across different segments in the country.

- Preventing the frauds at ATMs . A database of all customers with ATM cards can be created and facial recognition systems can be installed. So, whenever user will enter in ATM his photograph will be taken to permit the access after it is being matched with stored photo from the database.
- Reporting duplicate voters .

- Passport and visa verification can also be done using this technology.
- Also, driving license verification can be done using the same approach.
- In defence ministry, airports, and all other important places the technology can be used to ensure better surveillance and security.
- It can also be used during examinations such as Civil Services Exam, SSC, IIT, MBBS, and others to identify the candidates.
- This system can be deployed for verification and attendance tracking at various government offices and corporates.
- For access control verification and identification of authentic users it can also be installed in bank lockers and vaults.
- For identification of criminals the system can be used by police force also.