



Facial Attendance using Open CV

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ABSTRACT

The face is the primary identifier because it is the only constant among individuals. The face's unique characteristics can be used as a biometric in a face recognition system. Marking attendance is the hardest job there is. Teachers traditionally take attendance by calling out students and marking their attendance or absence. Conventional methods, however, are laborious and time consuming. The Open CV method for facial recognition has been proposed for this work. This model incorporates a camera for capturing input images, an algorithm for detecting faces in those images, a means of encoding and identifying those faces, a means of keeping track of attendance using a spreadsheet, and a means of converting that data into a PDF file. Faces of registered students are used to teach the system and create a training database. After the pictures have been cropped, they are filed away in a database with descriptive names. Here, the LBPH algorithm is used to extract the features.

KEYWORDS: LBPH, Open CV, Camera, biometric, face recognition, attendance, spreadsheet .

1. INTRODUCTION

1.1 Problem statement:

A person's face is a visual representation of his uniqueness or individuality. The project in question uses a person's face data for the purpose of taking attendance automatically. The regularity of a student's class attendance is crucial to the success of any educational institution. To take attendance, teachers typically call out students' names or roll numbers. The amount of time needed for this is a major issue.

1.2 Motivation:

Many workplaces and schools use automated attendance tracking systems. Biometric systems are one example. It's automatic, which is a huge plus, but it still can't beat the deadline. It is inconvenient that students have to form a line to turn in their attendance sheets.

In this project, we implement a system for automatically noting students' attendance without disrupting class time in any way. In other teaching activities where attendance is crucial, such as exams, the system can also be used. Traditional student ID methods, such as calling out students' names or checking their ID cards, are rendered unnecessary by this system. These methods not only disrupt the flow of class, but also cause unnecessary anxiety for students during testing.

The primary goal of this project is to implement a system for marking attendance automatically without disrupting regular class time. Additionally, the system can be used during examinations and other classroom activities where student presence is crucial. Traditional methods of student identification, such as calling out the student's name or checking their identification cards, are rendered unnecessary by this system. These methods not only disrupt the flow of class but also cause unnecessary anxiety for students during testing.

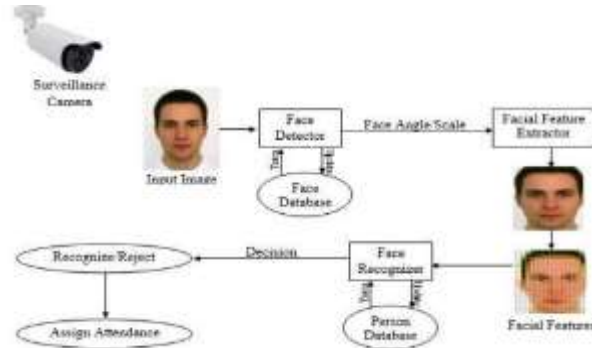
As such, the proposed system relies heavily on the facial features that serve as a person's unmistakable identification card. The face's unique characteristics can be used as a biometric in a face recognition system. Marking attendance is the hardest job there is. Teachers traditionally take attendance by calling out students and marking their attendance or absence. Conventional methods, however, are laborious and time consuming. The Open CV method for facial recognition has been proposed for this work. In order to keep track of who was present at a given event, this model combines a camera, an algorithm to detect faces in captured images, a means of encoding and identifying those faces, and an Excel spreadsheet. Faces of registered students are used to teach the system and create a training database.

2. PROPOSED WORK

Initially a ciphertext-policy attribute-based approach is applied for encrypted cloud data that includes a keyword search and shared facts. In the ciphertext-policy configuration, both the looking-out and sharing performances are enabled. Additionally, our method aids in keeping the keyword current all through

the distribution stage. After detailing how our technique is constructed, we demonstrate that it is secure against CCA and CKA in a random oracle setting. In terms of both overall performance and property comparison, the planned building has been found to be both realistic and environmentally benign.

3. SYSTEM DESIGN



4. IMPLIEMENTATION

Python facts follow.

Python is a popular high-level programming language.

Python supports OOP and Proc. Python code is smaller than Java.

Programmers type less, and indentation assures understandable code.

Google, Amazon, Facebook, Instagram, Dropbox, Uber, etc. use Python.

Python's greatest strength is its huge standard library.

- AI
- GUI
- Django
- Imaging
- Web-harvesting
- Structures

5. MODULES DESCRIPTION:

Step-1:

Load the color cartoon input image, I, of size $W \times H$.

Step-2:

Reduce the number of colors in I using the K-Means clustering algorithm using the color components of the input color image. The mean (m) and standard deviation (σ) values of each color band (R,G,B) are determined and, then, used to determine initial centroid values of each cluster. Here 8 clusters have been used to initially representing the color contents of the input image.

6. CONCLUSION

The purpose of this paper is to record student attendance by recording video of them, converting that video into still images, and then matching those images to a database to verify whether or not a student was actually present. High-precision, real-time attendance is achieved with the help of an automated classroom attendance system, satisfying the demand for such an evaluation method.

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