Smart Attendance System Using Face Recognition

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Abstract - *The mechanism of marking attendance is one of the necessary and interesting task for an instructor. In today's world, where our most of the task is automated, then why not the process of marking the attendance. The Conventional process of marking an attendance by calling the names of each and every student and then manually it marking is so much time consuming. Also, this process increases the risk of faulty attendance of student. In order to make this process a little bit simple, a system can be designed that can mark the attendance of a class of students by simply detecting their faces. We have used the python language along with machine learning algorithms and computer vision combined to make a system that can record the lecture wise attendance of students without the interference of any individual.*

Key Words: Python, Face Recognition, Machine Learning, Computer Vision

1.INTRODUCTION

All the organization whether it is school, college or office, the need of marking the attendance is necessary. There are many ways we can mark the presence, by using the conventional pen and paper method or by using some of the electronic machines like finger print scanner-based attendance or using the RFID cards. The conventional pen-paper based attendance marking is very much complex task as we have to manually manage the attendance sheets. In a study it is seen that on an average 10 to 12 minutes of a lecture is wasted in the process of marking the absentees. If we calculate if then we came to know that for 6 lectures, 1 hour is wasted in this process and for a year this figure becomes quite big. In place of pen-paper method, if we use other electronic devices we came to know that the cost of setting up those devices is very much high, so to overcome this challenge we are using a automated face recognition based system that will mark the attendance of a whole class just by detecting their faces through the help of camera.

1.1 Purpose

The purpose of developing this type of system is to reduce the effort and timing both of the instructor and students. This system can record real time lecture wise attendance and whenever there is need of the attendance records of the students, you can get directly from the system.

1.2 Scope

The scope of this software is very minimal. It will work only on the system on which it is installed.

2. PROPOSED SYSTEM

The task of the system is to capture the image of each student's face for a single time. At the same time the name and the student's ID is also stored with the captured image. All this information is then stored in the database. Next time when the face of student comes in front of the camera the system will capture its image and then this image is compared with the stored images in the database. The system will also have a timer which will be the time for which it will be marking the attendance and is it find someone missing, it will mark it as absent.

3. FACE DETECTION AND ATTENDANCE MARKING PROCESS

In the process of face detection, the captured image of a person's face is passed to the system and on that image the machine learning's face detection algorithm is applied. These algorithms generally focus on the 68 landmarks present on a person's face and 128 key points are identified on the captured face.
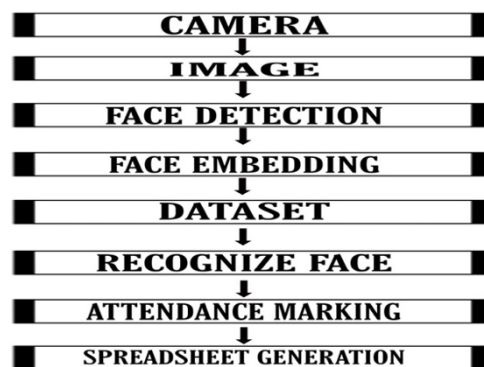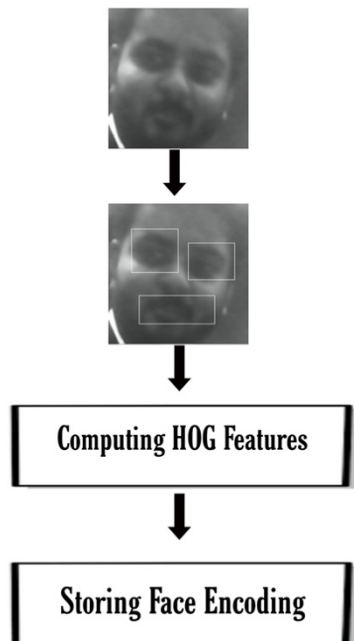

Fig 1: Process Flow

In order to match the captured face with the stored ones, the deep learning metric technique is used. This technique is highly accurate and helps to maintain and store the data files.

BIOGRAPHIES

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The last step of this software is to mark the attendance of the identified image in the format of spreadsheet. To do this job, python and XML are used which generates the student's ID of the present ones and return it with the data. The spreadsheet includes the student's ID, Student's Name along with the day and time. The spreadsheet is managed according to the subjects. By this feature the administrator is able to generate the lecture wise attendance of a class for any particular day.

4. CONCLUSIONS

By this we can conclude that SMART ATTENDACE SYSTEM is effective and simple. It can reduce the human efforts to greater extend. To make the attendance marking procedure more effective we used face recognition algorithms that uses the student's face image to perform its operation. The data stored in the system cannot be manipulated by any one who don't have administrator's permission.
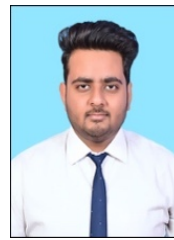
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REFERENCES

[1] **Kaneez laila Bhatti, "Smart Attendance Management System Using face recognition," EAI.EU.**

[2] **Namdhini R, Duraimurugan N, S.P.Chokkalingam, "Face Recognition based attendance system," IJEAT.**

[3] **Patil, Ajinkya, Mrudang Shukla, "Implementation of classroom attendance system based on face recognition in class", IJAET.**

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