Automated Attendance Management System Using Face Recognition.

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Abstract— The main goal and objective of this automated attendance system of face detection and recognition is to present face recognition in real time environment for educational institutes or an organization to see and mark the attendance of their students and employees on a daily basis to keep track of their presence. The system will mark and record the attendance in any environment. This system is purely automated and user can capture video and accordingly attendance will be marked, improving the accuracy to great extent and finally the attendance report will be generated.

Index Terms—— Attendance, Face Detection, Face Recognition, Video, Webcam.

I. INTRODUCTION

Image Processing is a type of processing a signal for which the requirements are photograph, video frame or an image.
There are two types of Image processing:
Analog and digital Processing.
Analogue image processing is an image processing technique which can be used for hard copies such as photographs and Printouts. While digital image processing involves manipulation of the digital images by using Pc's. Now a days Student or attendance plays a significant role in many college, universities and schools.
There can be two types of attendance:
1.Attendance system (Manual)
2.attendance system (Automated)
Automated attendance system will excerpt the image when person comes in the classroom and will accordingly mark the attendance. On the other hand, manual attendance system will verify and manage each and every record of student in paper which requires more time and effort of the faculty or staff and also chances of proxies are also more in manual attendance.

This system will be efficient and more user friendly as it can be run on devices which everyone has now a day. This study is the first attempt to provide an automated attendance system that identifies students using face recognition technology through an image or video stream for recording attendance in any classroom environment or and estimating the efficiency accordingly.

Through constantly detecting of facial info, this method will resolve less efficiency of technologies which are already existing, and advance the accurateness of recognition of faces. We studied and planned a technique or way that mark the presence or attendance using face recognition constructed on non-stop surveillance. In this proposed method or paper, our aim and purpose is to gain the images or video of the students face, their position and attendance which are beneficial info in the lecture or classroom environment.

II. LITERATURE REVIEW

There are many systems have been developed in engineering colleges and industries to keep a track of the attendance. The developed systems are good but their performance and stability problems. The developed systems are:

1) Biometric based System
2) Bluetooth based System
3) RFID based System

1) Biometric based System
The Biometric based systems take a unique part of the human body and use it for attendance management system for example iris, nostrils, retina, palm, fingerprints etc. The data keeps scaling up and the system needs to be maintained, refreshed

and regularly updated for later use. The attendance system using Computer or android devices provides a cheaper solution compared to the biometric based systems [1] [2]. The iris recognition system is useful system but the main drawback is it can cause injuries to the eye [2]. The same goes for face recognition which assures uniqueness but has the same drawbacks [3].

2) Bluetooth System

This system has high usability and proxy removal methods can be included to make the system perfect. However, the system is not scalable and requires 8 connections active at a time. Bluetooth do not allow more than 8 connections at a time this is due to a master and slave concept. This redundancy makes it a feasible resource for a limited population [2].

3) RFID System

The RFID systems are popular than Bluetooth based system. Students are given RFID cards in their schools and colleges along with their Identity cards. These cards are put into the RFID reader before the student enters the classroom. These systems require permanent supervision because students can put two cards in the RFID reader leading to a proxy and also inappropriate usage can harm the RFID reader [4]. RFID reader also requires maintenance.

III.   PROPOSED METHOD

We projected solutions to all of the cited complications by providing a system that is automated for the students who attends a specific lecture, laboratory, section or exam at its specified time duration, thereby saving a lots of effort and time and decreasing interruptions and disruption. One more advantage relating to exam is that when a lecturer by mistake losses exam sheet and students lie about whether they attended the examination. So there will be a genuine record of the attendance of students thereby protecting both student's and student's privileges. On the other hand, one advantage is that an evaluating a performance which is automated provides much precise and trustworthy outcomes evading chances of human error.

The main goal or objective of the system is to automate the attendance system that is reliable

practical and eradicates disruption and loss of time in outdated system of attendance
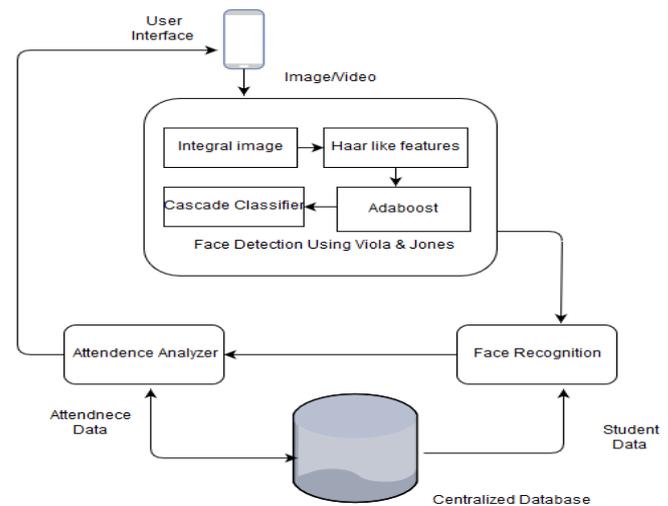

fig: System Architecture
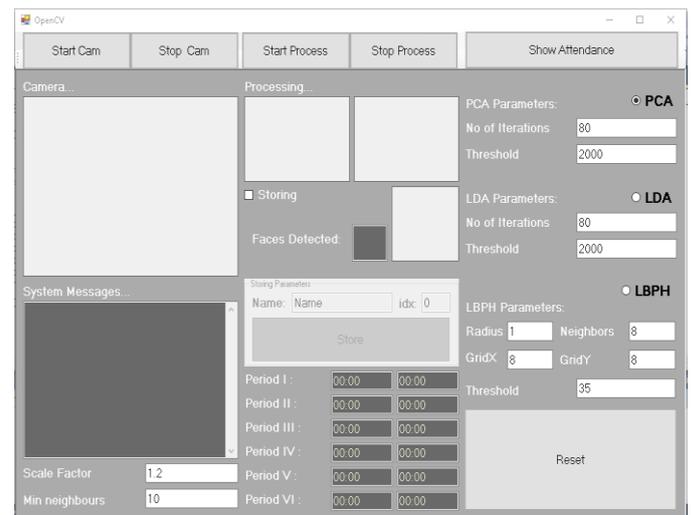
IV.   IMPLEMENTATION

Fig : *Graphical user interface (GUI) of the system*

The process starts with training the system with face of students/employees for whom the attendance has to be marked in the near future. Different faces are assigned different names in the system.

The period decides the threshold time limit within which the student will be marked present. Once the threshold limit is crossed is crossed the student will not be marked absent in the system for that particular period

Algorithms such as PCA, LDA and LBPH can be used in varying light scenarios, as light plays an important role in image processing.

Also a webcam with high specifications should be used as it plays a key role in face detection and recognition. Hence, the better is the webcam used, the more is the efficiency in the system attained.

V. CONCLUSION

This system has been proposed for maintaining the attendance record. The main motive behind developing this system is to eliminate all the drawbacks which were associated with manual attendance system.

The drawbacks ranging from wastage of time and paper,till the proxy issues arising in a class, will completely be eliminated.

Hence, desired results with user friendly interface is expected in the future, from the system. The efficiency of the system could also be increased by integrating various steps and techniques in the future developing stages of the system

VI. REFERENCES

[1] Seema Rao and Prof.K.J.Satoa, "An Attendance Monitoring System Using Biometrics Authentication", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 3, Issue 4, April 2013, ISSN: 2277 128X

[2] Seifedine Kadry and Khaled Smaili. "A Design And Implementation Of A wireless Iris Recognition Attendance Management System ", Information Technology And Control, 2007, Vol.36, No.3; ISSN 1392 – 124X.

[3] Nirmalya Kar, Mrinal Kanti Debbarma, Ashim Saha, and Dwijen Rudra Pal. "Study of Implementing Automated Attendance System Using Face Recognition Technique" International Journal of Computer and Communication Engineering, Vol. 1, No. 2, July 2012

[4] Arulogun O. T., Olatunbosun A., Fakolujo O. A., and Olaniyi O. M, "RFID Based Students Attendance Management System " International Journal of Scientific & Engineering Research", Volume 4, Issue 2, February-2013; ISSN 2229-5518.

[5] Unnati A.Patel and Dr. Sawminarayan Priya R. 2014. "Development of a Student Attendance Management System Using RFID and Face Recognition: A Review", International Journal of Advance Research in Computer Science and Management Studies, Volume 2, Issue 8, August 2014; Online ISSN: 2321-7782..