Face Recognition And Attendance System

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Abstract- *Daily attendance marking is a common and important activity in schools and colleges for checking the performance of students. Manual Attendance maintaining is difficult process, especially for large group of students. Some automated systems developed to overcome these difficulties, have drawbacks like cost, fake attendance, accuracy, intrusiveness. To overcome these drawbacks, there is need of smart and automated attendance system. Traditional face recognition systems employ methods to identify a face from the given input but the results are not usually accurate and precise as desired. The system described in this we aims to deviate from such traditional systems and introduce a new approach to identify a student using a face recognition system, the generation of a facial Model. This describes the working of the face recognition system that will be deployed as an Automated Attendance System in a classroom environment*

Keywords- Attendance system ,Simple User Interface , Time saver.

I. INTRODUCTION

Nowadays Attendance is considered as an important factor for both the student as well as the teacher of an educational organization. With the advancement of the deep learning technology the machine automatically detects the attendance performance of the students and maintains a record of those collected data by using some face-recognition library in Python . In general, the attendance system of the student can be maintained in two different forms namely, Manual Attendance System, Automated Attendance System .

Manual attendance may be considered as a time-consuming process or sometimes it happens for the teacher to miss someone or students may answer multiple times on the absence of their friends. So, the problem arises when we think about the traditional process of taking attendance in the classroom. To solve all these issues we go with Automatic Attendance System using face-recognition. Automated Attendance System is a process to automatically estimate the presence or the absence of the student in the classroom by using face recognition technology.

II. LITERATURE SURVEY

[1]Face Detection and Recognition using OpenCV and Python Tejashree Dhawle1, Urvashi Ukey2, Rakshandha Choudante3 1-3Student, Department of Computer Engineering, Dr. BabasahebAmbedkar Technological University Raigad, India This research paper gives an ideal way of detecting and recognizing human face using OpenCV,and python which is part of deep learning .This report contained the way in which deep learning an important part of computer science field can be used to determine the face using several libraries in open CV along with python. This report will contain a proposed system which will help in the detecting the human face in real time. This implementation can be used at various platforms in machines and smartphones, and several software application

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Automatic face recognition (AFR) technologies have made many improvements in the changing world. Smart Attendance using Real-Time Face Recognition is a real-world solution which comes with day to day activities of handling student attendance system. Face recognition-based attendance system is a process of recognizing the students face for taking attendance by using face biometrics based on high - definition monitor video and other information technology. In my face recognition project, a computer system will be able to find and recognize human faces fast and precisely in images or videos that are being captured through a surveillance camera. Numerous algorithms and techniques have been developed for improving the performance of face recognition but the concept to be implemented here is Deep Learning. It helps in conversion of the frames of the video into images so that the face of the student can be easily recognized for their attendance so that the attendance database can be easily reflected automatically.

[3]A Study of Various Face Detection Methods Ms. Varsha Gupta1 , Mr. Dipesh Sharma2 Research Scholar, Department of Computer Science and Engineering, RITEE, Raipur, India1

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Because of image-databases and ―live‖ video information is growing more and more widespread, their intelligent or automatic examining is becoming exceptionally important. People, i.e. human faces, are one of most common and very specific objects, that we try to trace in images. Face detection is a difficult task in image analysis which has each day more and more applications. We can define the face detection problem as a computer vision task which consists in detecting one or several human faces in an image. It is one of the first and the most important steps of Face analysis. In this paper we presented various methods of face detection, which are commonly used. The seminal Viola-Jones face detector is first reviewed. We after that survey a variety of techniques according to how they extract features and what learning algorithms are adopted. These methods are Local Binary Pattern (LBP), Adaboost algorithm, SMQT Features and SNOW Classifier Method and Neural Network-Based Face Detection. It is our hope that by reviewing the numerous existing algorithms, we will see yet better algorithms developed to solve this fundamental computer vision problem. In this survey, we categorize the detection methods on the basis of the object and motion representations used, present thorough descriptions of representative methods in each category, and look at their pros and cons.

[4]Face Recognition Based Attendance System For CMR College of Engineering and Technology KalachugariRohini, SivaskandhaSanagala, RavellaVenkataRathnam, Ch.RajakishoreBabu

In modern times, Automatic Face recognition (AFR) technologies have seen dramatic improvements in performance over the last few years. There are two reasons for this trend; the first is for saving the time in the classroom and accuracy in attendance will be maintained, and the second is availability of advanced technology it is more useful for the future generation. In simple words, it was a computer implementation for recognizing automatically whether the student is present in the classroom or not with the help of still image or video frame. We proposed an automatic attendance management system. It was completely based on face recognition and the face detection. This both detection and recognition will automatically detect the students in the classroom and mark the attendance by recognizing the person. This research includes for Face detection Students and system is based on CNN perspectives and algorithms. Keywords: Face Recognition, Face Detection, CNN, AFR, Deep Learning.

III. STUDIES AND FINDINGS

Attendance is an important part of daily classroom evaluation. At the beginning and ending of class, it is usually checked by the teacher, but it may appear that a teacher may miss someone or some students answer multiple times. Face recognition-based attendance system is a solution of this problem recognizing face for taking attendance by using face recognition technology based on high definition monitor video and other information technology. The concept of face recognition is to give a computer system the ability of finding and recognizing human faces fast and precisely in images or videos. Numerous algorithms and techniques have been developed for improving the performance of face recognition. Recently Deep learning has been highly explored for computer vision applications. Human brain can automatically and instantly detect and recognize multiple faces. But when it comes to computer, it is very difficult to do all the challenging tasks on the level of human brain. The face recognition is an integral part of biometrics. In biometrics, basic traits of human are matched to the existing data. The face recognition system generally involves two stages: Face Detection – where the input image is searched to find any face, then image• processing cleans up the facial image for easier recognition. Face Recognition – where the detected and processed face is compared to the database of• known faces to decide who that person is.

IV. DISCUSSION

Facial recognition technology is a system or software which is capable enough to verify the identity of a person from analyzing an image or video footage. Some of the technologies or software are so advanced that even blurred pictures are sometimes rendered enough and analyzed to know the identity of the person. So much are the advantages of this system that it would take a long article to note down each and every one of them. But today, our prime focus will be on one of the many applications of facial recognition technology, and that is using face recognition based attendance system.

- Advantages

1. Automated time tracking system
2. Time saving
3. Easy to manage
4. Cost-effective

- Disadvantage

1. Low reliability

2. Lack of regulations in the AI in Face recognition systems

V. CONCLUSION

Automated Attendance System has been envisioned for the purpose of reducing the errors that occur in the traditional (manual) attendance taking system. The aim is to automate and make a system that is useful to the organization such as an institute. The efficient and accurate method of attendance in the office environment that can replace the old manual methods. This method is secure enough, reliable and available for use. No need for specialized hardware for installing the system in the office. It can be constructed using a camera and computer.

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REFERENCES

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