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AI Based Attendance System Using Faces Recognition

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ABSTRACT

Artificial intelligence-based attendance systems with facial recognition are essential for monitoring student performance in any organization. This technology has made many improvements in a changing world. Facial recognition-based attendance with real-time facial recognition is a real-world solution that is closely linked to everyday student attendance management activities. In all organizations, attendance is recorded manually by calling the registration number or name and entering it in the attendance list issued by the department head as evidence. In some organizations, students sign these sheets and save them for later reference. Al-based presence system with facial recognition Computer systems can quickly and accurately find and recognize the faces of people from images captured by surveillance cameras. The system can recognize a person's face and record that person's presence, making presence activities more efficient and faster.

Keywords: Student Attendances System, Biometric System, Artificial Intelligence, Face Recognition.

1.INTRODUCTION

The student's attendance system use of synthetic intelligence idea particularly works the use of the idea of facial reputation machine. Face is taken into consideration as a number one key function to pick out and speak with different peoples withinside the international due to the fact face taken into consideration as a completely unique identification for every and each student. The facial functions might be precise to the alternative indusial. The Unique functions for each indusial make facial reputation in enforcing the actual international. Human distinguish a specific folks face primarily based totally on numerous elements like color, nose, eyes, ears, and many others however for computer systems, it is hard to investigate the statistics so we might also additionally use the idea of Computer imaginative and prescient. The goal of the usage of personal computer imaginative and prescient era to apprehend the human functions in a personal computer.

In current years we discovered incredible adjustments in face reputation strategies due to to be had biometric methods, that is the maximum unnoticeable approach. The set-up face reputation structures on a huge scale are clean however the real implementation of face reputation machine is bold as it has to recall for all ability instances variant resulting from a amendment in face expressions with the aid of using light-weight, face expressions, one-of-a-kind styles, photograph resolution, sensing detail device, viewing distance, and many others. Several algorithmic regulations are applied on face reputation and each set of rules has strengths and competencies with the aid of using its own. We have a tendency to do face reputation almost on aneveryday basis. Most of the time we look at a face and renowned with the aid of using in a flash with the statistics gift already withinside the database This flair if ability observed with the aid of using machines will have an impact on be precious and ought to deliver for an essential position in real-world packages like range get admission to management, country wide and worldwide protection and defense, and many others. At gift particularly strategies depend upon Face reorganization methods. The first and really acquainted technique is local face reputation machine that relies upon on face expressions of a overlaying as an instance eyes, nose, color, and many others. To pick out the face with a a person matching or not. The 2nd technique is international face reputation machine which makes use of the complete face to pick out someone. The defined strategies are enforced with the aid of using a way with the aid of using diverse forms of algorithms. The current implementation the usage of synthetic intelligence packages in face reputation draws many scientists to investigate in this topic. The elaboration of a face functions originates from the adjustments constantly in the facial features that adjustments with the aid of using time. Apart a majority of these adjustments, we're equipped to renowned an character easily. Facial Recognition System may be described in easy phrases because the era that identifies someone and verifies it with the database with the aid of using evaluating the facial functions defined with the aid of using Chaitanya reddy.

Face Recognition:Scientistscommenced running on computer systems to apprehend human faces from mid-1900s due to its widespread packages on face reputation has obtained non-stop interest from researchers. Face reputation can be mentioned due to the approach of feature with the aid of using a person primarily based totally on biometrics with the aid of using the technique of matching a taking pictures photograph or video with the statistics gift

withinside the database. The statistics float procedure in face Recognition structures begins off evolved with the aid of using having the capacity to discover face and apprehend frontal faces from statistics enter gadgets like cell phones, cameras, and many others. Practically it's been validated that scholar attended instructions simplest whilst there may be complete manage on study room and attendance monitoring.

2.LITERATURE REVIEW

In this paper, the concept of technology specifically Student Attendance and Feedback gadget has been carried out with a synthetic intelligence approach. This gadget mechanically detects the scholar overall performance and continues the scholar's information like attendance and their remarks at the topics like Science, English, etc. Therefore, the attendance of the scholar may be made to be had through spotting the face. On spotting, the attendance information and information about the marks of the scholar is received as remarks [1].

Automated Attendance System the usage of Face Recognition proposes that the gadget is primarily based totally on face detection and reputation algorithms, that is used to mechanically detects the scholar face while he/she enters the elegance and the gadget is successful to marks the attendance through spotting him. Viola-Jones set of rules has been used for face detection which detected human face the usage of cascade classifier and PCA set of rules for characteristic choice and SVM for classification. When it's far in comparison to standard attendance marking this gadget saves the time and additionally facilitates to screen the scholars. In the front of the digital digicam to discover and apprehend the iris, for the gadget to mark attendance for the scholar. Some algorithms like grey scale conversion, six phase square filter, pores and skin pixel detection is getting used to discover the iris. It facilitates in stopping the proxy troubles and it continues the attendance of the scholar in a powerful manner, however in one of the time-ingesting method for a scholar or a body of workers to attend till the final touch of the preceding members [2].

This paper proposes that the gadget takes the attendance mechanically reputation received through non-stop remark. Continuous remark facilitates in estimating and enhancing the overall performance of the attendance. To reap the attendance, positions and face photos of the scholar's gift withinside the elegance room are captured. Through non-stop remark and recording the gadget estimates seating role and vicinity of every scholar for attendance marking. The paintings are centered at the technique to reap the specific weights of every centered seat in line with its vicinity. The effectiveness of the photograph is likewise being mentioned to allow the quicker reputation of the picture. Camera that detects and acknowledges the faces of the scholars and the device compares the identified face with students' face photos saved withinside the database. Once the face of the scholar is matched with the saved picture, then the attendance is marked in attendance database for similarly calculation. If the captured picture does not in shape with the scholars' face gift withinside the database then this picture is saved as a brand-new picture onto the database. In this gadget, there are opportunities for the digital digicam to now no longer to seize the picture nicely or it could omit a number of the scholars from capturing[4].

However, they are very practical either for fast coarse pre-searches of large face database to reduce the computational load for a subsequent sophisticated algorithm, or as part of a hybrid recognition scheme. Such hybrid approaches have a special status among face recognition systems as they combine different recognition approaches in an either serial or parallel order to overcome the shortcoming of the individual components. Another way to categorize face recognition techniques is to consider whether they are based on models or exemplars [5].

Models are used in to compute the Quotient Image, and in to derive their Active Appearance Model. These models capture class information (the class face), and provide strong constraints when dealing with appearance variation. At the other extreme, exemplars may also be used for recognition. The ARENA method in simply stores all training and matches each one against the task image. As far we can tell, current methods that employ models do not use exemplars, and vice versa. This is because these two approaches are by no means mutually exclusive. Recently, proposed a way of combining models and exemplars for face recognition. In which, models are used to synthesize additional training images, which can then be used as exemplars in the learning stage of a face recognition system [6].

3.EXISTING SYSTEM

Existing system of system of project management is manual. Project coordinator or guide gives task for student manually. Student complete the work which is given by coordinator or guide and submits manually, in this system all work is done by manually so it can take more time to complete project related work. Project coordinator or guide requires remembering in mind when student completed the work so it is difficult for Project coordinator or guide which student completed the task and when. In the existing system does not help users to get right information at right time and user cannot manage project development easily to achieve the main goal.

The objective of this project is to develop face recognition attendance system. Expected achievements in order to fulfill the objectives are:

- To detect the face segment from the camera frame.
- To extract the useful features from the face detected.
- To classify the features in order to recognize the face detected.
- To record the attendance of the identified student.

The system architecture of the proposed system is given below:

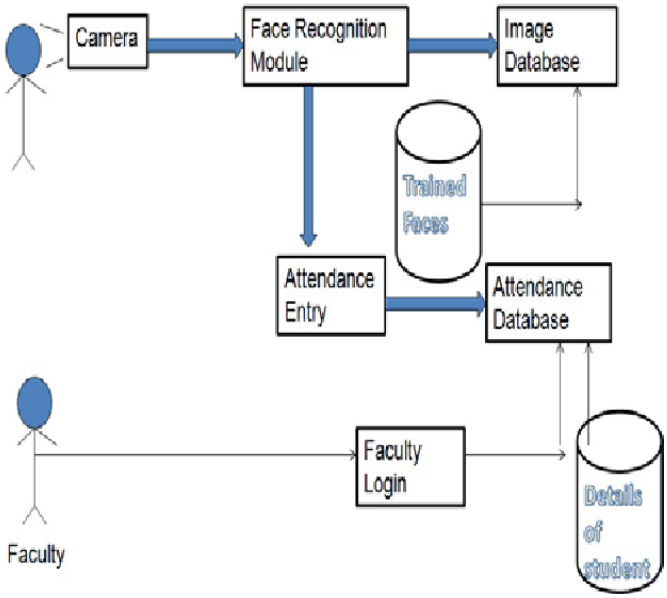

Fig No. 1 System Architecture

4.PROPOSED SYSTEM

All the students of the class must register themselves by entering the required details and then their images will becaptured and stored in the dataset. During each session, faces will be detected from live streaming video of classroom. The faces detected will be compared with images present in the dataset. If match found, attendance will be marked for the respective student. At the end of each session, list of absentees will be mailed to the respective faculty handling the session.Typically, this process can be divided into four stages.

- **Dataset Creation**

Images of students are captured using a web cam. Multiple images of single student will be acquired with varied gestures and angles. These images undergo pre-processing. The images are cropped to obtain the Region of Interest (ROI) which will be further used in recognition process. Next step is to resize the cropped images to particular pixel position. Then these images will be converted from RGB to gray scale images. And then these images will be saved as the names of respective student in a folder.

- **Face Recognition**

Face recognition process can be divided into three steps- prepare training data, train face recognizer, prediction. Here training data will be the images present in the dataset. They will be assigned with an integer label of the student it belongs to. These images are then used for face recognition. Face recognizer used in this system is Local Binary Pattern Histogram. Initially, the list of local binary patterns of entire face is obtained. These LBPs are converted into decimal number and then histograms of all those decimal values are made. At the end, one histogram will be formed for each image in the training data. Later, during recognition process histogram of the face to be recognized is calculated and then compared with the already computed histograms and returns the best matched label associated with the student it belongs to.

- **Attendance Updating**

After face recognition process, the recognized faces will be marked as present in the excel sheet and the rest will be marked as absent and the list of absentees will be mailed to the respective faculties. Faculties will be updated with monthly attendance sheet at the end of every month.

5.EXTERNAL INT. REQUIREMENT

- **User Interfaces:**

The user interface for the software shall be compatible to any Android version by which user can access to the system. The user interface shall be implemented using any tool or software package like Android Studio, MYSQL etc.

- **Hardware Interfaces**

To run our project, the hardware part is first completed to provide a platform for the software to work. Before the software part we need to install some libraries for effective working of the application. we required a hardware system which is feasible for our project like Intel I3 processor, 4 GB minimum RAM, 5GB Hard disk. We also need standard Camera Module with good mega pixels, keyboard. Since the application must run over the internet, the hardware shall require connecting internet to the hardware which is android device for the system.

- **Software Interfaces**

This system is a Single-user, multi-tasking environment. It enables the user to interact with the server and attain interact with the server to show the animal information also leaves a record in the inbuilt database. It uses Java and android as the front-end programming tool and MySQL as the back-end application tool.

To run the admin module system requirement is Web browser where we can sign -in the admin panel. The development of a face recognition based automatic student attendance system using ConvolutionalNeural Networks which includes data entry, dataset training, face recognition and attendance entry

- **Communication Interfaces**

The e-store system shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite.

Artificial Intelligence enabled Face detection primarily based totally software turning into international famous. This changed into mentioned through Santana Fell.

6.FLOW OF SYSTEM

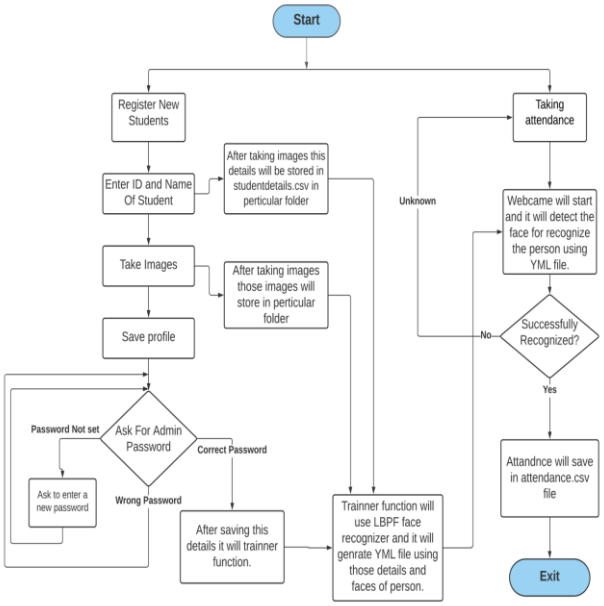

Fig No.2 Flow of System

7.RESULT

Fig No.3 Admin

Fig No.4 Features of Face Recognition

8.GRAPHICAL RESULT

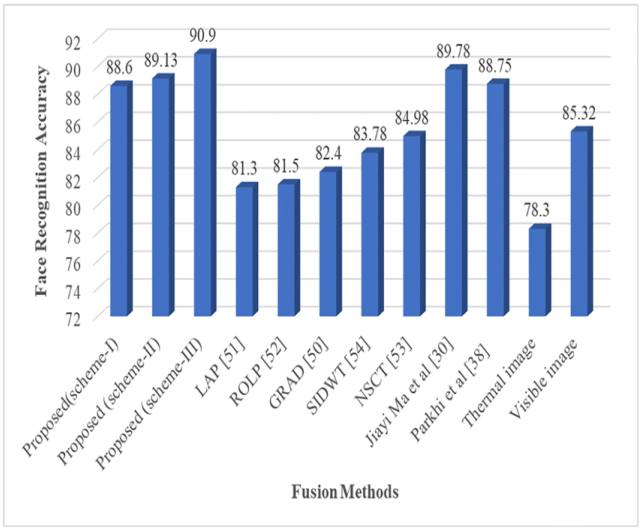

Fig No.5 Graphical Diagram

9.CONCLUSION

This Device objectives to construct a powerful magnificence attendance device the use of face reputation techniques. The proposes device could be capable of mark the attendance through face ID. It will stumble on faces through webcam after which understand the faces. After reputation, it's going to mark the attendances of the identifiedgift pupil and replace the attendances record.

.REFERENCES

[1] N. Sudhakar Reddy, M.V. Sumanth, S. SureshBabu, "A Counterpart Approach to Attendance and Feedback System using Machine Learning Techniques", Journal of Emerging Technologies and Innovative Research (JETIR), Volume 5, Issue 12, Dec 2018.

[2] Dan Wang, Rong Fu, Zuying Luo, "Classroom Attendance Auto-management Based on Deep Learning", Advances in Social Science, Education and Humanities Research, volume 123,ICESAME 2017.

[3]B.Prabhavathi,V.Tanuja,V.MadhuViswanantat

and M.Rajashekhara Babu, "A smart technique for attendance system to recognize faces through parallelism", IOP Conf. Series: Materials Science and Engineering 263, 2017.

[4] Prajakta Lad, Sonali More, Simran Parkhe, Priyanka Nikam, Dipalee Chaudhari, " Student Attendance System Using Iris Detection", IJARIIE-ISSN(O)-2395-4396, Vol-3 Issue-2 2017.

[5] Samuel Lukas, Aditya Rama Mitra, RirinIkanaDesanti, Dion Krisnadi, "Student Attendance System in Classroom Using Face Recognition Technique", Conference Paper DOI: 10.1109/ICTC.2016.7763360, Oct 2016.

[6] K.Senthamil Selvi, P.Chitrakala, A.Antony Jenitha, "Face Recognition Based Attendance Marking System", IJCSMC, Vol. 3, Issue. 2, February 2014.

[7] Yohei KAWAGUCHI, Tetsuo SHOJI, Weijane LIN, Koh KAKUSHO, Michihiko MINOH, "Face Recognition-based Lecture Attendance System", Oct 2014.

[8] Shireesha Chintalapati, M.V.Raghunadh, "Automated Attendance Management System Based on Face Recognition Algorithms", IEEE International Conference on Computational Intelligence and Computing Research, 2013.

[9] B. K. Mohamed and C. Raghu, "Fingerprint attendance system for classroom needs," India Conference (INDICON), Annual IEEE, pp. 433–438, 2012.