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Face Recognition System for Automated Student Attendance

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ABSTRACT

Conventional methods of taking the attendance can result in different problems like fake attendance by students in other words proxy attendance or may it be marking the wrong attendance knowingly or unknowingly. The proposed technique defeats the deformities that exists in the conventional method. This new computerized method of taking attendance will help in identifying the students by recognizing their eye by utilizing Machine learning algorithms.

KEYWORDS: *digital attendance, digital identification, digital recognizing, attendance, machine learning, RFID*

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I. INTRODUCTION

A robotic or machine structure/framework for human face recognition in a consistent way for schools/colleges to record the attendance of their students. The coordinated face is used to check the attendance of the Student. Our structure takes care of the attendance records of Students thusly.

During the previous years the manual way of taking attendance of the students there would be a chance for the data to be lost may it be by the students by giving proxy attendance or the teacher might have done a mistake in putting the attendance in a hurry or may be the any other reason too.

We can upgrade the security of this model by using IRIS retina scan for more safer and vigorous/robust environment.

II. Literature review

1. Author in this paper has proposed a model which can overcome the disadvantages existing in the present attendance system. By the use of using face recognition and RFID it will be easier in tracking student's presence.

2. In this paper the Author recommends that smart attendance system which is understudy's attendance utilizing face acknowledgment and RFID helps in quickly diminishing the instructor inconvenience or dread of getting intermediary attendance. Managing attendance through Face Recognition System is a lot simpler than conventional way.

The creator of the paper performed proposition on individuals living in Arab nations. Where young ladies wear cover and young men are whiskers this can make equivocalness in perceiving students face. This can be overwhelmed by utilizing certain example following in various sexual orientations which helps in isolating both male and female.

3. The scholar in this paper has proposed a technique to record the student's participation in the class by keeping this surveillance camera in the class. This upgrades the learning productivity of students evading conventional move call technique. It identifies and stamps students as absent when he/she utilizes cell phone past edge time.

4. The interpreter of the paper suggested that the process of taking attendance through face acknowledgment frameworks is a non-interrupting philosophy and it makes the association keep up a precise collaboration data base as the test picture is experienced various levels. The as expected and out-season of the understudy checked and dependent on the time the put by the understudy in the class. Thusly, this system at whatever point completed, it incidentally turns out to be a confirmed and approved structure with first class.

5. This framework has been intended to robotize the participation upkeep. The primary target behind building up this framework is to kill all the downsides and capricious strategies for manual participation dealing with. The customary strategies slack the adequacy of the framework driving the time and paper wastage, and causes intermediary participation which is killed in mechanized framework. So to beat all such

disadvantages of manual participation, this system would come out to be better and dependable arrangement as for both time and security. Thusly, robotized participation framework assists with recognizing the appearances in study hall and perceive the faces precisely to check their participation. The proficiency of the framework can be extemporized by fine entrusting of the preparation cycle.

III. Problem statement

Recording student's participation utilizing manual strategy has bounty number of imperfections and this lead the improvement of RFID based participation this technique is likewise fused with certain deformities. This face recognition basedattendance framework diminishes intermediary of attendance, consequently just those students will get participation who are available actually, no one else can give participation for the benefit of another person.

Face recognition for participation/attendance support is outstanding amongst other approach to handle gives that are existing in the first procedures.

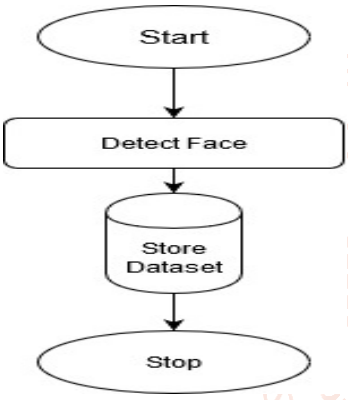

Fig 4.1 face detection and storage

- Face detection and storage: The model identifies the face example and stores the picture in the information base for the future use

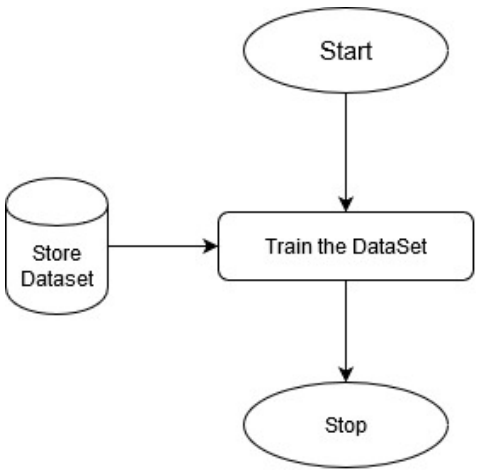

Fig 4.2 Image training

- Image training: Pictures that are put in the database get strained by putting away various boundaries of the picture.

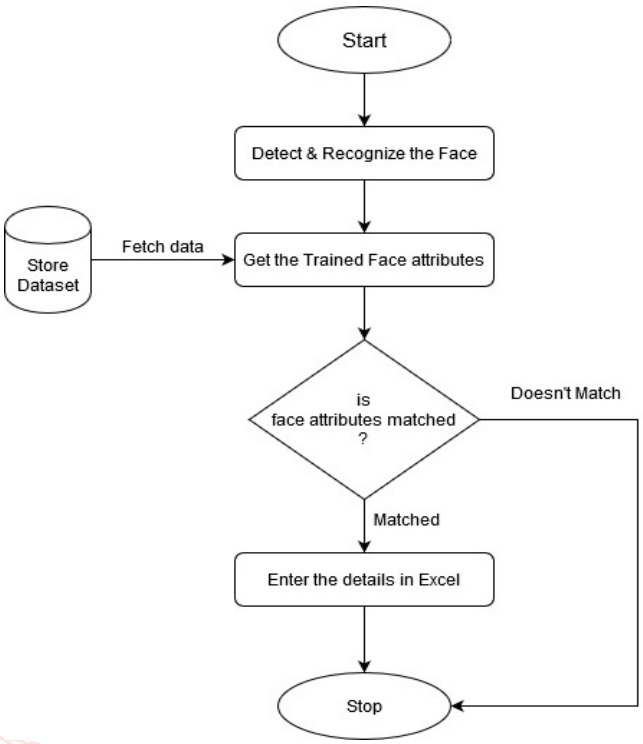

Fig 4.3 face recognition from database

- While distinguishing face for remembering it with information base, picture of the individual gets identified and checks whether there are any predefined designs accessible for that picture and if there is no accessible examples individual's face don't get perceived.

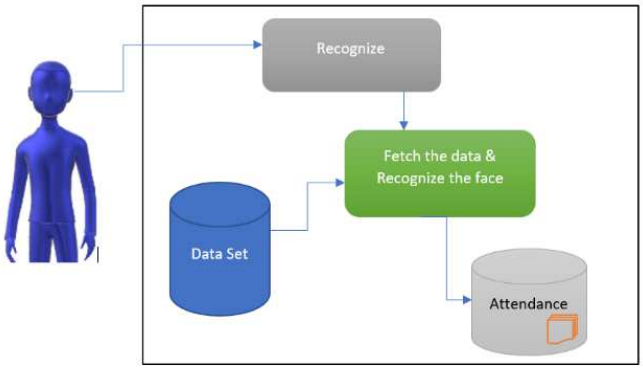

Fig 4.4 System Module

At first student's face gets perceived and caught by the camera the user's attributes gets stored in the database based on the parameters that are pre-characterized in the back end. Afterward while recording attendance, student's face gets scanned by the camera and the system rationale matches for the patterns of that specific face in the database and on the off chance that match is discovered, at that point participation of that specific student is stamped. In the event that student face is not coordinated with the patterns in the database, at that point obscure tag is displayed.

IV. Related technologies

Face detection technology

Face ID is a PC advancement being used in an assortment of uses that distinguishes human faces in automated pictures. Face discovery furthermore alludes to the psychological technique by which individuals find and deal with countenances in a visual scene

Face recognition technology

A facial acknowledgment structure is a development prepared for perceiving or checking a person from a mechanized picture or a video layout from a video source. There are various procedures wherein facial affirmation structures work, anyway all things considered, they work by differentiating picked facial features from given picture with faces inside an information base. It is moreover portrayed as a Biometric Artificial Intelligence based application that can strangely recognize a person by analyzing plans reliant on the person's facial surfaces and shape.

V. Result Analysis

- Face acknowledgment for participation acquired another pattern recording understudy's quality which expands the productivity of understudies learning by decreasing deformities that exists in manual model.

The information as of late taken is the face instance of another understudy. The face arrangement is isolated with the assistance of camera and Arduino assists with controlling the whole framework. The models once gathered can be dealt with in the data base near to the understudies' subtleties. During the piece of the understudy, the structure checks for the entirety of their faces' models and yields for a comparable match in the data base related. On the off chance that there is a comparable model anticipating most phenomenal 85%, by then a worth 1 is gotten back to the data base which marks venture status for the relating understudy as "present". Notwithstanding 0 is returned if there should be an occasion of miss match and backing is checked "missing". SQL Update Queries can be utilized to accomplish it. Relative qualities are rehashed irregularly and incase on the off chance that any understudy needs to go out, by then the face arrangement is perceived by the camera and in the event that the understudies returns inside 15 minutes of holding time, by then same driving force as the earlier hour is repeated. On the off chance that, on the off chance that the understudy returns late with the information on concerned resources, by then the worth 1 can be returned as special case by the personnel later. In the event that none of the two occurs and the understudy returns late, by then the worth 0 will be returned for dependably until the understudy's faces is seen and restored once more. In this manner occasional interest can be developed.

Conclusion and future Enhancements

Face recognition is the advanced technique to record student participation. This can beat the impediments that exists in the conventional participation framework and RFID. Security and perceptions are the critical parts which will be significantly influenced. By using powerful structures of security we can build the respectability of the framework model.

Incorporation of student evaluation subtleties, for example, inner imprints, action marks, contact subtleties and so forth makes the framework more strong and this makes upkeep of student records simpler.

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