CLOUD INTEGRATED SMART ATTENDANCE SYSTEM

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ABSTRACT

Traditional class attendance registration relies on professor roll-calling, sign-in, and other inefficient methods. Despite the fact that facial recognition has been increasingly popular at home and abroad in recent years, there is no effective application system for this purpose on Chinese university campuses. The paper describes the CBCA System, which is an automatic class attendance registering system based on face detection and identification on cloud computing. Students simply need to stand in front of the camera for a few seconds to sign in, and sign-in data can be recorded in a local or central database. This technique considerably aids teachers in improving class roll-calling efficiency. Furthermore, rather than wasting time, pupils can concentrate on the content of the lesson. We discovered that the programme is adaptable, trustworthy, and achieves a 100% recognition rate in real-time after a few months of use for various classes. Cloud computing, face recognition, andautomatic attendance are all terms that come to mind when thinking about cloud computing.

Keywords-*Attendance system, cloud computing, facial recognition, roll calling, automated attendance.*

INTRODUCTION

A common research challenge for computer programmers is human identification and authentication. Face recognition, iris recognition, retina scan, voice recognition, fingerprint, signature, and voice analysis are only a few examples of biometric authentication. Face recognition in one of the easy and the powerful method which can be implemented in numerous industries for the Identification process since it is non-contact process. One of the applications in which the facial recognition technology provides a rapid reaction is the automatic attendance maintaining system. Various authors have presented various solutions for resolving the standard chaotic classroom attendance management system. The system is set up in such a wayindividually in order to ensure that that attendance is created for each student ivy complete their course and classes. There are morerecords in the database. Correct, and the statistical analysis reports the findings date-by-date, course-by course, major-by-major, and instructor by instructor. Many automated technologies exist in the field that o identify capture the faces of the students and then attempt t and store them. A system called the CBCA System is proposed in this research that can provide 100 percent accuracy in recognition, which is a huge difficulty for many systems developed on their own DNN (Deep Neural Networks). Instead of constructing our own DNN, cloud AI is used to do face training registration and recognition to achieve the accuracy. Unlike previous similar systems presented in China, our method uses a video camera to capture each student's face one at a time, rather than using the entire classroom picture as an input image and attempting to recognize all of the faces in the

picture. It can considerably enhance the recognition rate by removing the effects of light conditions, a variable angle, and other factors on the quality of the image obtained. It simply takes a few seconds to complete the process.

LITERATURE SURVEY

We have studied several papers based onAttendance Management System. First paper we have studied is named as "Biometric Based Attendance" which has published by Mr. Yash Mittal, Ms. Prachi Aggrawal and Mr.Kapil Mitanni. In this paper Biometric scaled up for real time deployment, it provide solution of late coming.

The second paper named as "Finger Based Attendance Management with SMS Alert to Parents" which is published by Ms. Poonam Choudhary, Prof .G.N. Dhoot and Mr. Sopan Borale .This paper introduced system include terminal fingerprint module and attendance module and SMS system for alerting parents for updating about their child

The third paper named as "Smart attendance Management and Learning System" which is published by Prof. H.B. Sale, Piranha She Lake, To fail Siddhiqui. This paper facility of notes dictation, defaulter list, notes view, notification, details view for students, staff, teachers and Admin.

The forth paper named as "Key Authentication Based Door lock Monitoring System "Which is published by Chimney Kulkarni , Avinash Bagul and Pranamya Korde.This project is concentrate more on automation of institute security provides lesser security than actual physical security.

The fifth paper named as "Employee Attendance Monitoring System Using radio frequency Identity Card" Which is published by S.Mohan kumar, Sanjay Chand ran, Tamil Selvan and Ajith Kumar .Facilitates automatic wireless identification using ID tags and reader method

BLOCK DIAGRAM

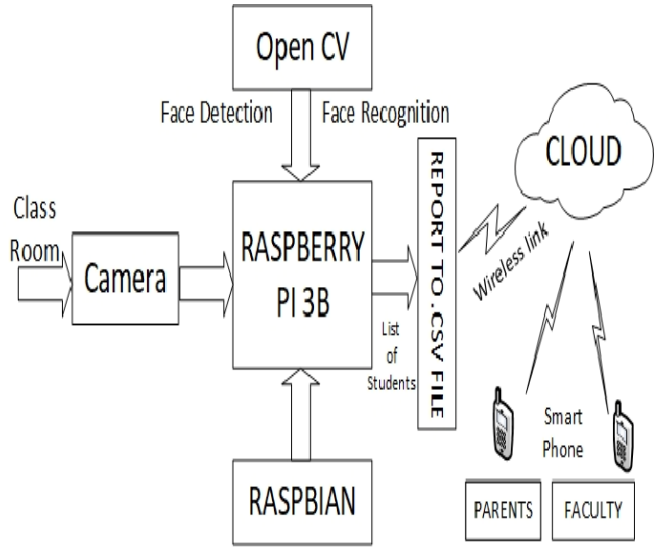

Fig.1 : Block Diagram

BLOCK DIAGRAM EXPLANATION

This module is used to designate each student's face with their ID number. The steps are as follows: a video camera records a student's face; using Open CV, send numerous face photos and labels (student ID, and school name) to cloud for training through JSON; cloud will manage the face data and complete the training registration procedure. Stop once you've received feedback from cloud. Each student will take a few seconds to complete this process. It is logical and trustworthy.

Module B: Face Recognition This module is used to keep track of student attendance. The steps are as follows cloud will do face recognition based on the face data on the cloud side,and give back results through JSON, including recognition scores, recognized student ID, and so on. Step Depending on whether the results were recognized (we obtained the student ID) or not, we will proceed to the next step. For instance, storing the student's ID and other information in a local database, or telling the student that we are unable to recognize him or her. The explanation for this could be that he or she is not enrolled in this course or that his or her face has not yet been registered on the cloud side. Class roll is used to prevent students from signing up for the wrong class. Even if the system recognizes a student's face, if he or she is not registered in a class, the system will not keep his or her attendance record in the database.Because the face id recognition system with cloud solves such disadvantages, our approach is effective for occluded faces and some unfocused faces.

Module for Voice Synthesis When a face is successfully detected, this module begins to work. The first time a student is recognized; the module will automatically create an MP3 file that says the student's name and play it to notify the student. This MP3 file information will be recorded in the database. If a student is detected for the second time, the module will obtain an MP3 file containing the student's name voice by using the address already entered in the database. Voice synthesis is a feature that notifies students after they have successfully signed up for a course. By delivering a string of the student's name to the platform, the module can obtain a byte array that represents the synthetic voice fragment. A converter and a media player are included in the module. The voice fragment is saved in MP3 format to a cache directory via an output file stream. The MP3 file is subsequently loadedand played via an input stream by the media player. The temporary files will notbe removed when the user closes the application; instead, they will be saved in a specific local directory, with the file name saved in the database. With this design, the speech synthesis module will not have to synthesize the same person's name again the following time the same student arrives. By referencing to the file name contained in the database, it can play the voice saved on the local disc. MySQL is used to create it.Displays the attendance system's four core tables: "checking table,""student,""course table," and "department." (We may need more tables in the future to handle more functionality.) The “checking table" database, as illustrated in, keeps track of a student's check-in date and time, as well as student id, course id, semester, and year.

CONCLUSION

There are a few recommendations that might be taken into consideration in order to improve this system. To begin, we will improve the user interface based on user feedback to make it more user-

friendly. Second, the system can send mobile warnings to students who have exceeded their absence limits or who have insufficient attendance information. Finally, we'll complete the mobile application client for attendance tracking. This CBCA system based on face detection provided a more efficient and accurate approach for students to sign in and for teachers to analyses data. The system has been put to use and has met all of the design specifications. In the future, we will continue to improve the system and promote it in new industries.

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