"Automation of Attendance System Using Face Recognition Technique"

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Abstract:

Now days, the attendance is the major issue in schools and colleges. The students will bunk the classes or giving proxy attendance using the existing system by which attendance will taking by teachers. Teachers also misguide or giving wrong attendance of the student to the higher board authorities or to the management.

In this project, we implement the system, which takes the attendance by using face recognition technique, and automate the taken attendance for further use. Because of this system, we can prohibit the proxy attendance and stop the teachers to misguide the higher board authorities. In this system, the attendance report will automatically be generated to the respective teachers. We also implement the one display board concept on which we display the current class wise attendance in one part; in second part, we display the any important notice, message or comments given by respective authorized person. In addition, in third part we give a slide bar on which we display the names of the students of which having the birthdays at present day automatically with one birthday wish message.

I. INTRODUCTION

Education is central to development. It is one of the most powerful instruments for reducing poverty and inequality and lays a foundation for sustained economic growth. With this aim currently our government has given special emphasis to the educational sector and school improvement activities such as continuous professional development for teachers, training and upgrading teachers and capacitating schools with labor and materials are among the major actions, which have been taken in both primary and secondary schools. To facilitate and simplify these actions one of the major tools is to have automated school management system.

This application widely used in schools, colleges or organizations. Where the attendance is major issue and the time also. This application reduces much time compare to the traditional system of attendance. It also can be fit in to the big scale offices where the need of keep record of employee's entry and exit.

Face reputation is an intrinsic a part of the human seen perception and clearly considered considered one of our center abilities. Imagine searching for a portrait photo of Yourself without noticing that it is miles you inside the picture. Even worse, to your day-by-day lifestyles you meet familiar human beings and spot faces day in, day experience absents of the capability to apprehend those without one of a kind to be had cues as voice, hairstyle, gait, clothes and Context statistics. In the human mind, there are committed areas that offer us our terrific face popularity abilities.

II. PROBLEM STATEMENT

The Problem statement of Automation of attendance system using face recognition Technique is given below:

- To do face recognition in real time.
- Enhance the Speed i.e., frames/sec
- Do recognition on high Camera resolution.

III. OBJECTIVE

The goals of Automation of Attendance System Using Face Recognition System are given under:

- To beautify the Frame/sec for Face Recognition System, such that Recognition is done in Real Time.
- Presently, work on 30frames/sec our motto is to achieve better frames/sec or high-Resolution frames/sec.

IV. Software and Hardware Used

- Software Used:

1. Operating System (Windows 7)
2. Web Server (IIS web server)
3. Database (SQL server/MYSQL)
4. Web browser
5. Visual Studio 2010
6. Camera driver

- Hardware Used:

1. Server
2. A desktop or laptop computer for the system users with the following specifications:

- Intel core 2 duo processor 2.4 MHz or next
- Minimum 2 GB RAM DDR2 or HIGHER
- Minimum 250 GB storage space

V. OPEN-CV

A. Open-CV (Open-Source Computer Vision Library) is an open-source BSD-certified library that includes several loads of pc vision algorithms. Open-CV has a modular shape, which means that the package deal consists of several shared or static libraries.

The following modules are available:

1. Core Functionality
2. Image Processing
3. Video
4. Calib3D
5. Features2D
6. Object
7. High GUI
8. Many extra

B. MODULES OF PROJECT

MODULE ONE :

1] Attendance Processing

Take attendance by using Biometric system i.e., using Face Recognition Technique. Save attendance into Database by student's register id.

MODULE TWO:

2] Mail Attendance:

Class Monitor- Sending attendance of each student by lecture wise.

HOD- Sending attendance of each class by year wise in integer form.

Principal- Sending attendance of each Trade in integer form i.e., total no. of student's is present to a particular lecture.

This will be a web application & handle automatically.

This project is based on the Online Process i.e., this application handle in Client-Server architecture.

MODULE THREE:

3] Display Board:

One LCD screen will be taken & its screen is divided in to three different parts.

1. Second part displays a message, notice or any comment given by administrator.
2. The name list of students will be sliding continuously like marquee.

MODULE FOUR:

4] Application Users:

This application gives each user, a username & a password at the time of registration.

The administrator users have authority to post the important comments or notice to the display board. In addition, he can see the mails of attendance, which are coming to his account.

Some new ideas will be implemented at the time of design in this module.

MODULE FIVE:

5] SMS:

We create a module in which we send the SMS to the parents to which student has the attendance below the 60% by using bulk SMS or using another technique.

C. System Architecture

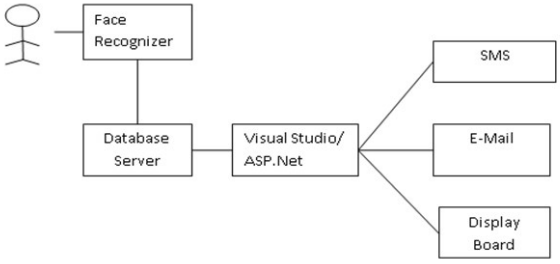

Fig- 5.1 System block diagram

VI. ADVANTAGES

1. Time Saving
2. High Security
3. Easy Time Tracking
4. Productivity
5. Easy to manage

VII. APPLICATIONS

1. Security and Defense:

By far the most popular applications of facial recognition, technology has been for personal as well as public security by law enforcement agencies. Personal security includes gaining access to personal information and most popularly personal mobile devices.

2. Retail and Marketing:

The use of technology has become popular in retail outlets to prevent shoplifting and reduce crime within their stores. As shoppers walk in, their faces are captured and contrasted against a database to identify people with a history of petty and violent crime alike. This type of tech is said to be able to reduce shoplifting by over 30%.

3. Healthcare:

Possibly one of the most important Applications of Facial Recognition technologies is in the healthcare sector. Doctors and healthcare officials alike can use facial recognition to access patient's medical records as well as monitor and diagnose certain diseases.

4. Hospitality:

The hospitality sector is one of the most competitive industries in the world. Every advantage whether large or small makes a difference to the players within it. By Applications of Facial Recognition technology, the possibilities are endless.

CONCLUSION

Our system can be used in a completely new dimension of face recognition application, mobile-based face recognition, which can be an aid for common people to know about any person being photographed by cell phone camera including proper authorization for accessing a centralized database. Maintain Student attendance & record their time of entry and exit.
Improved performance in the estimation of the attendance compared to the traditional system.

REFERENCES

1. Clyde Gomes, Sagar Chanchal, Tanmay Desai and Deepti Jadhav, (2020) "Class Management System Using Facial Recognition", ITM Web of conferences 32, 02001.

2. Chaitra T.K., M.C. Chandrashekhar, Dr. M.Z. Kurian, (2018) "Attendance Management System Using Face Recognition Technique", JETIR August 2018, Volume 5, Issue 8.

3. Aparna Trivedi, Chandan Mani Tripathi, Ashish Kumar Srivastava, Neha Kulshrestha, (2022) "Face Recognized Based Automated Attendance Management System", Department
Of Computer Science & Engineering, Ambalika Institute of Management & Technology, Lucknow, India

