REAL TIME FACE RECOGNITION AUTOMATIC STUDENTS ATTENDANCE MANAGEMENT

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ABSTRACT

In the era of modern technologies emerging at rapid pace there is no reason why a crucial event in the educational sector such as attendance should be done in the old boring traditional way. Attendance monitoring system will save a lot of time and energy for the both parties students as well as the class teachers. Attendance will be monitored by the face recognition algorithm by recognizing only the face of the students from the rest of the objects and then marking them as present. The system will be pre feed with the images of all the students and with the help of this prefered data the algorithm will detect who is present and match the features with the already saved images of them present in the database.

Keyword : *Networking, Machine Learning,python etc.*

1. INTRODUCTION

The purpose of the attendance monitoring system using face recognition is to ease the attendance process which consumes a lot of time and effort. It is a convenient and easy way for students and teachers. The system will capture the images of the students and using a face recognition algorithm mark the attendance in the sheet. This way the class-teacher will get their attendance marked without actually spending time in traditional attendance marking. The identification process to determine the presence of a person in a room or building is currently one of the routine security activities. Every person who will enter a room or building must go through several authentication processes first, and later this information can be used to monitor every single activity in the room for a security purpose. Authentication process that is being used to identify the presence of a person in a room or building still vary. The process varies from writing a name and signatures in the attendance list, using an identity card, or using biometric methods authentication as fingerprint or face scanner.

2. MOTIVATION

Nowadays many educational institutes are using a manual monitoring system and most of the time they accidentally loss their attendance sheet so that they cannot properly monitor the attendance of their students .Therefore it is important to design software which will help these institutes to mark the attendance of the students by face recognition which will save their time.

2.1 BASIC FLOWCHART DIAGRAM

Fig-1 Basic Flowchart of Attendance System

3. LITERATURE SURVEY

Sr. No.	Paper Name/Author	Publication Year	Methodology	Conclusion
1.	Monica.C, Nithya.R, Prarthana.M, Sonika.S.V, Dr.M.Ramakris hna	2017	The design is expressed in sufficient detail so as to enable all the developers to understand the nderlying architecture of the Attendance system.	The Existing system is a manual entry for the Admin and also Faculty. Here the attendance will be carried out in the hand written registers. Maintaining the records for the Faculty is a tedious job
2.	Abdoulrahman Mohammad, Mohammad Elmi Hassan Muslim Musa	2018	In this we study it capable of eliminating time wasted during manual collection of attendance and for the educational administration	The new system has been designed as per the user requirements so as to fulfill almost all of them. -User friendly -Report Generation -Less paperwork

4.SOFTWARE REQUIREMENTS AND SPECIFICATION

4.1 INTRODUCTION

4.1.1 PROJECT SCOPE

The scope of the system is to reduce the time of the teacher as well as student which they wasted by doing traditional attendance.

4.1.2 USER CLASSES AND CHARACTERISTICS

Identify the various user classes that you anticipate will use this product. User classes may be differentiated based on frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience. Describe the pertinent characteristics of each user class. Certain requirements may pertain only to certain user classes. Distinguish the most important user classes for this product from those who are less important to satisfy.

4.1.3 ASSUMPTIONS AND DEPENDENCIES

This document will provide a general description of our project, including user requirements, product perspective, and overview of requirements, general constraints. In addition, it will also provide the specific requirements and functionality needed for this project such as interface, functional requirements and performance requirements.

4.2. FUNCTIONAL REQUIREMENTS

Functional user requirements may be high-level statements of what the system should do but functional system requirements should also describe clearly about the system services in detail.

4.3 EXTERNAL INTERFACE REQUIREMENTS

4.3.1 USER INTERFACE

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

4.3.2 HARDWARE INTERFACE

Since the application must run over the internet, the hardware shall be required to connect the internet to the hardware which is an android device for the system

4.3.3 SOFTWARE INTERFACE

This system is a Single-user, multi-tasking environment. It enables the user to interact with the server and to 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.

4.3.4 COMMUNICATION INTERFACE

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.

4.4. NON FUNCTIONAL REQUIREMENTS

4.4.1 PERFORMANCE REQUIREMENTS

System can produce results faster on 2GB/4GB of RAM.It may take LESS time for peak loads at the main node. The system will be available 100% of the time. Once there is a fatal error, the system will provide understandable feedback to the user.

4.4.2 SAFETY AND SECURITY REQUIREMENTS

The system is designed in modules where errors can be detected and fixed easily.

4.4.3 SOFTWARE QUALITY ATTRIBUTES

Reliability: The Client machine will change the status of data indicating successful data transmission.
Usability: The application should be easy to use through an interactive interface.
Maintainability: The system will be developed using the standard software development conventions to help in easy review and redesigning of the system.
Support ability: The system will be able to support different types of SQL queries.
Portability: This software is portable to any system with the requirements specified. There must also be a server where the database can be set-up.

5. SYSTEM REQUIREMENT

5.1. SOFTWARE REQUIREMENT PLATFORM

Operating System : Windows OS
Platform: Android Studio
Programming Language : PHYTON

5.2 HARDWARE REQUIREMENT

Processor: INTEL Pentium 4 Processor Core
Hard Disk: 40 GB (min)
RAM: 256 MB or higher

6. OTHER SPECIFICATIONS

6.1 ADVANTAGES

It is trouble-free to use.
It is a relatively fast approach to enter attendance.
Is highly reliable, approximate result from user .
Best user Interface .
Can obtain accuracy upto 85 percent.

6.2 LIMITATIONS

While training there generates nearly 100 copies of sample images.
While dealing with a high volume of data, a system requires a powerful processor which is more costly.

6.3 APPLICATIONS

It is very useful for educational institutes to get attendance easily.
We can get attendance of students as well as teachers without doing conventional attendance.

7. CONCLUSIONS

The Attendance Management System is developed using Machine Learning to meet the objectives of the system which it has been developed. The system has reached a steady state where all bugs have been eliminated. The system is operated at a high level of efficiency. The system solves the problem. It was intended to solve the requirement specification. The system can recognize and identify the face well with an accuracy of 85 %, at a face distance 40 cm from the camera with adequate lighting.

8. REFERENCES

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