Modern Attendance System - A New Way For Taking Attendance by Face Recognition

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1 Abstract

In this digital era, face recognition system plays a vital role in almost every sector. Face recognition is one of the mostly used biometrics. It can used for security, authentication, identification, and has got many more advan- tages. Despite of having low accuracy when compared to iris recognition and fingerprint recognition, it is being widely used due to its contactless and non-invasive process. Furthermore, face recognition system can also be used for attendance marking in schools, colleges, offices, etc. This system aims to build a class attendance system which uses the concept of face recognition as existing manual attendance system is time consuming and problematic to maintain. And there may be chances of proxy attendance. Thus, the need for this system increases. Faces are detected and recognized from a camera placed inside the classroom.

1.1 Keywords

Deep Learning, Face Recognition, Face Detection, Attendance system.

2 Introduction

Face recognition is the process of identifying an individual based on their facial features. Such a system can be used in photos or videos, or in real-time machines. The objective of the present study is to provide a simple and easy method in machine technologies. With the help of this technique one can easily detect the faces by the help of datasets in similar matching appear- ances of a person. The present method is useful in many areas such as the military, security, schools, colleges, and universities, airlines, banks, online web applications, and gaming etc. This system utilizes powerful Python algorithms through which the detection and identification of faces is very easy and efficient. [1]
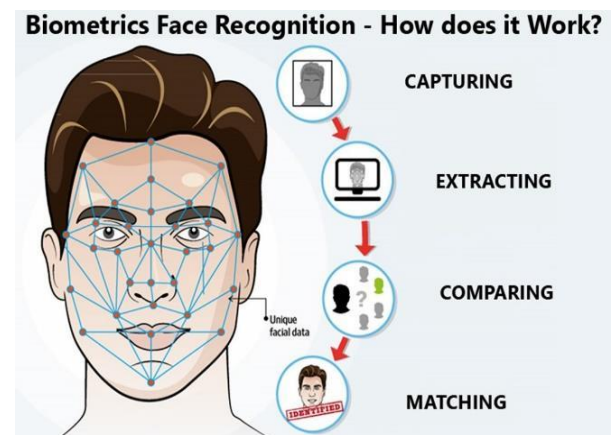

2.1 Problem Statement

The existing attendance system requires students to login to the Attendance website every time they attend a class. This includes the more time consumed by the students to login in to the site, Write the attendance code, fill up the form and sometimes it's possible that due to network issue the student couldn't fill up the attendance. For avoiding this problem, we have developed a Face Recognition Attendance system.

3 Literature survey

In this Project, the idea of two technologies namely Student Attendance and Face Recognition system has been implemented with a machine learning ap- proach. This system detects the student's face and maintains the student's attendance. Therefore, the attendance of the student can be made available by recognizing the face. On recognizing, the attendance details are

obtained in a separate file.
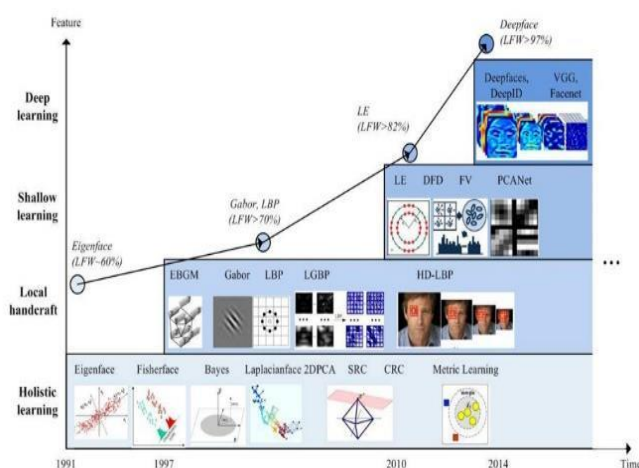
4 Methodologies

Deep learning evolved recently in the process of the understanding, systems. Hence, deep learning along with the facial recognition, together work as deep metric learning systems. In short, deep learning in facial detection and recognition will broadly work on two areas the first being accepting the solidary input image or any other relevant pictures and the second, being given the best outputs or the result of the images of the pictures. We would be using dlib face recognition framework that would be the easy and simple way to organize the face evaluation. The two main significant libraries used into the system are dlib and face recognition. Python being a very powerful programming language and one of the programming languages that is being used all over the world has proven to provide best results in the face recognition and detection systems. Together face recognition and detection becomes very easy and productive with the help of python. [2]

4.1 Need of an automated system

Due to the rising demand for the systems that can help in the areas of surveillance as well as security, this type of individual authentication can no more be done using simple handmade techniques hence there is a rising requirement of the automated systems that could easily rectify the faults as well as process the human face recognition in an efficient manner. When the work is performed by machines, it can perform tasks efficiently within very less duration of time thus cutting off the major mistakes occurred due to manual processing. A real time based facial recognition system built can ease the work of face detection and could be achieved in various ways.

5 Conclusion

Face recognition work is currently made easier by the association of face recognition systems with numerous, leading technical enterprises and sectors. It is a simpler and more practical instrument or system that can be created by anyone in accordance with their requirements thanks to the usage of Python programming, OpenCV, and face-recognition. The user-friendly and cost-effective method that is proposed in this project will be helpful to many people. Therefore, the face recognition system can be created for a variety of purposes by using Python,OpenCV and face-recognition. [3]

References

[1] Neel Ramakant Borkar and Sonia Kuwelkar. Real-time implementation of face recognition system. In 2017 International Conference on Computing Methodologies and Communication (ICCMC), pages 249–255, 2017.

[2] Smitha, Pavithra Hegde, and Afshin. Face recognition based attendance management system. International Journal of Engineering Research and, V9, 06 2020.

[3] Shervin Emami and Valentin Suciu.Facial recognition using opencv. Journal of Mobile, Embedded and Distributed Systems, 4, 03 2012.