



Research Article

ATTENDANCE SYSTEM USING FACE RECOGNITION

Umarani Chellapandy and Malavika S

Jain University Bangalore

ARTICLE INFO

Article History:

Received 6th December, 2021

Received in revised form 15th

January, 2022

Accepted 12th February, 2022

Published online 28th March, 2022

ABSTRACT

The real challenge is to implement an accurate attendance system in real-time. In this digital era, face recognition system plays a vital role in almost every sector. It can be used for security, authentication, identification, and has got many more advantages. 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. This system aims in building an attendance system using face recognition which is much more effective than manual system of attendance which is time consuming.

Key words:

Attendance system using face recognition

Copyright©2022 Umarani Chellapandy and Malavika S. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

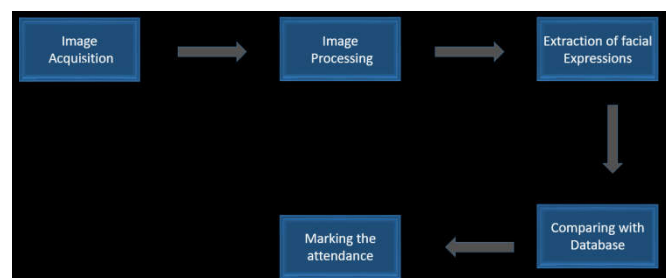
Traditionally, student's attendances are taken manually by using attendance sheet given by the faculty in class, which is a time consuming event and when it comes to companies, employees have to follow biometric or card swiping. It is a tedious task and extra burden to the faculties or the admin. This can result in cheating or proxy attendance. So many institutions and companies have proposed new systems of attendance like Iris recognition, fingerprint recognition etc.

Face recognition is a biometric method of identifying an individual by comparing live capture or digital image data with the stored record for that person. This provides an automated attendance system that is practical, reliable and eliminates disturbance and time loss of traditional attendance systems. This system can accurately evaluate the students or employees performance with the recorded attendance rate

Proposed System

All the employees of the company must register by entering the required details and then their images will be recorded in the database. Faces will be detected using wireless webcam and the image will be processed and the attendance will be marked. Attendance regularization mail will be sent to the respective employee in case of missing attendance and the admin can get the accurate attendance records later for the evaluation.

System Architecture



The process is divided into 4 phases:

Data Collection

All the details of the students including the images in various angles will be recorded and stored for the comparison. Images are captured using webcam. Basic information of the students/employees will be updated.

Face Detection

Face detection is held using the Haar-Cascade classifier with Open CV. This is detection method used for detecting human faces.

Face Recognition

In this phase, the image captured will be compared with data set and recognize and predict the person.

Attendance Updation

After identifying the face, the recognized face will be marked as present in the attendance sheet and the result will be sent in mail.

LITERATURE ARCHITECTURE

Akbar, Md Sajid, *et al.* "Face Recognition and RFID Verified Attendance System." 2018 International Conference on Computing, Electronics & Communications Engineering (iCCECE). IEEE, 2018.

The model focuses on how face recognition combined with Radio Frequency Identification (RFID) detects and counts authorised students as they enter and exit the classroom. Every registered student's authentic record is kept by the system. The system also keeps data on every student registered for a specific course in the attendance log and provides necessary information as needed.

Okokpujie, Kennedy O., *et al.* "Design and implementation of a student attendance system using iris biometric recognition." 2017 International Conference on Computational Science and Computational Intelligence (CSCI). IEEE, 2017.

The authors of this paper designed and implemented an attendance system based on iris biometrics. Initially, attendees were asked to register their information as well as their unique iris template. At the time of attendance, the system automatically took class attendance by capturing each attendee's eye image, recognising their iris, and searching for a match in the database that had been created. The prototype was a web-based application.

Siswanto, Adrian Rhesa Septian, Anto Satriyo Nugroho, and Maulahikmah Galinium. "Implementation of face recognition algorithm for biometrics based time attendance system." 2014 International Conference on ICT For Smart Society (ICISS). IEEE, 2014.

The authors of this study compared the Receiver Operating Characteristics (ROC) curve to find the best facial recognition algorithm (Eigenface and Fisherface) provided by the Open CV 2.4.8 and then implemented it in the attendance system. Based on the results of the experiments in this paper, the ROC curve demonstrated that Eigenface outperforms Fisherface. The Eigenface algorithm was used to implement the system, which achieved an accuracy rate of 70% to 90%.

CONCLUSION

This system aims to build an effective attendance system using face recognition techniques. The proposed system will be able to mark the attendance via face Id. It will detect faces via webcam and then recognize the faces. After recognition, it will mark the attendance of the recognized employee and update the attendance record. In the end, the result will be send in mail as present / missing attendance to the respective persons mail.

References

- https://www.researchgate.net/publication/341876647_Face_Recognition_based_Attendance_Management_System
- <https://www.ijert.org/implementation-of-face-recognition-based-attendance-system-using-lbph>
- <https://www.slideshare.net/ShreyaDandavate/face-recognition-attendance-system-96913577>

How to cite this article:

Umarani Chellapandy and Malavika S(2022) 'Attendance System Using Face Recognition', *International Journal of Current Advanced Research*, 11(03), pp. 550-551. DOI: <http://dx.doi.org/10.24327/ijcar.2022.551.0121>
