iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 9 **Issue:** V **Month of publication:** May 2021

DOI: https://doi.org/10.22214/ijraset.2021.34723

www.ijraset.com

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 9 Issue V May 2021- Available at www.ijraset.com

Biometric Attendance using Face Recognition

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Abstract: Facial recognition attendance have made great impact in today's changing world. Attendance using Real-Time Face Recognition is the need of the hour for efficient management of handling student attendance. Face recognition-based attendance system is a process of recognizing the students face for taking attendance by using face biometrics based on high - definition monitor video and other information technology. In our project a system will do human faces detection and recognition efficiently and accurately through the images or videos that are being captured through a surveillance camera.
Keywords: Attendance, biometrics, recognition.

I. INTRODUCTION

In face recognition various algorithms and techniques have been developed for detection of face. Here image processing along with open-cv is used for face detection. Images of students faces are generated for new user registration and training the model. Biometric is being widely used in various sectors due to its effectiveness in attendance system and easy working. With the wide use of image processing and LBPH algorithm the machine trains itself for identification purpose. Attendance is an important aspect in every sector for tracking and maintaining data of people along with their availability.

Also, with great improvement in the field of the machine learning training the machine and overall attendance system working. Previously the attendance of the students was maintained in manual form. The traditional method was very time consuming for teachers where teachers were required to take attendance by calling names and numbers. So to improve the attendance experience along with efficient attendance automated attendance system using biometric proves beneficial.

System and Automated Attendance System. Biometrics has boost up the attendance system which was previously very time consuming due to traditional old methods. Due to automated attendance lot of time is saved along with secure and precise attendance.

Many private, commercial as well as government sectors make use of biometrics. Attendance system has become much easier and more convenient due to use of biometrics.

II. LITERATURE SURVEY

A. Attendance using Artificial Neural Network

In this paper we learned about attendance system using neural network. In the implementation of neural network pca algorithm for data extraction and for identifying face images. Thus, artificial neural network is used for identifying output from the given input values. It works like a human brain for performing any activity and training the system. Artificial neural network is widely used due to its performance as per the human brain and its accuracy.

B. Biometric Attendance based on Speech

In this paper we learned about attendance system based on speech biometrics. In this attendance system IVR system is used for new user registration and for verification purpose. IVR system allows users to interact with the system through the use of voice i.e speech-based form. IVR system works on the basis of recorded or generated voice notes. The response generated through IVR system is also precise.

With IVR technology attendance has become much simpler. The database of the user is recorded and stored for attendance and verification purpose. A unique code is assigned to each user for attendance purpose. When the user attendance is being marked the code is verified from the database. If the code matches with the code from the database user attendance is marked. Thus, multiple attendance of the users can be marked through this technique. It is very convenient and widely used technique.

C. Attendance using Face Recognition

In this paper we learned about a method where student attendance is done through face recognition technology by using Discrete Wavelet Transform and Discrete Cosine Transform for retrieving facial features of students with use of applying Radial basis function for face recognition. This technique is very precise and gives accurate results by using dwt and dct transform methods.

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III. METHODOLOGY

The attendance system based on face detection and face recognition algorithm involved. Here are some of the modules as followed:

A. Image or video will be recorded to known that every student is present in the image should be seen.
B. Separate as per the detected images in the class attendance.
C. Applying lbph algorithm along with image processing for face detection model detect the students faces as output.
D. In this module automatic attendance, the students seating order should be fixed, so that there will not be any contrast their faces. The device can easily identify the faces.
E. The proposed system uses OpenCV library. It is an Open-Source Computer Vision Library that is free for both academic and commercial use.
F. Open CV has a face recognizer class library for face recognition and manipulation.

IV. USE-CASE VIEW OF SYSTEM

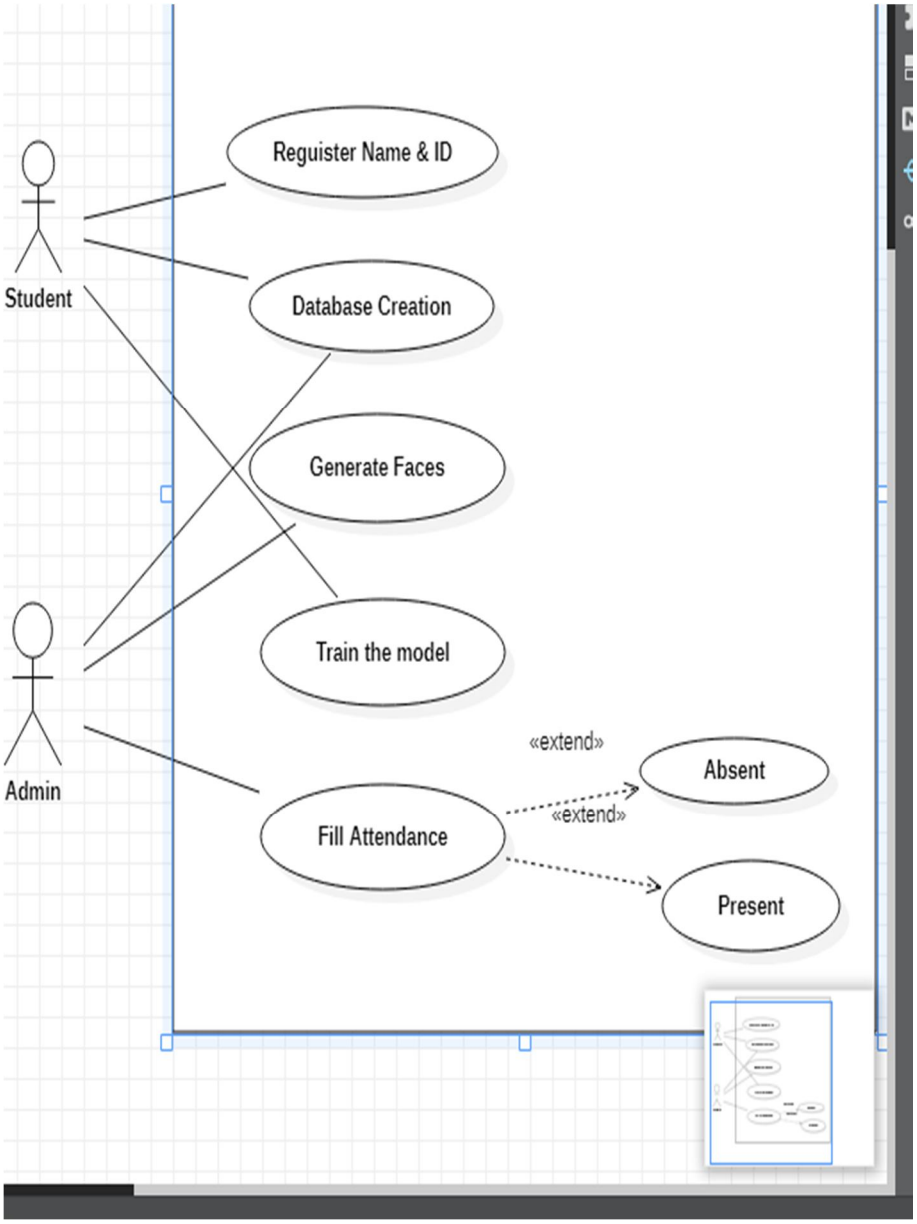

Fig 1 .Use case diagram of attendance system

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V. DESIGN PHASE

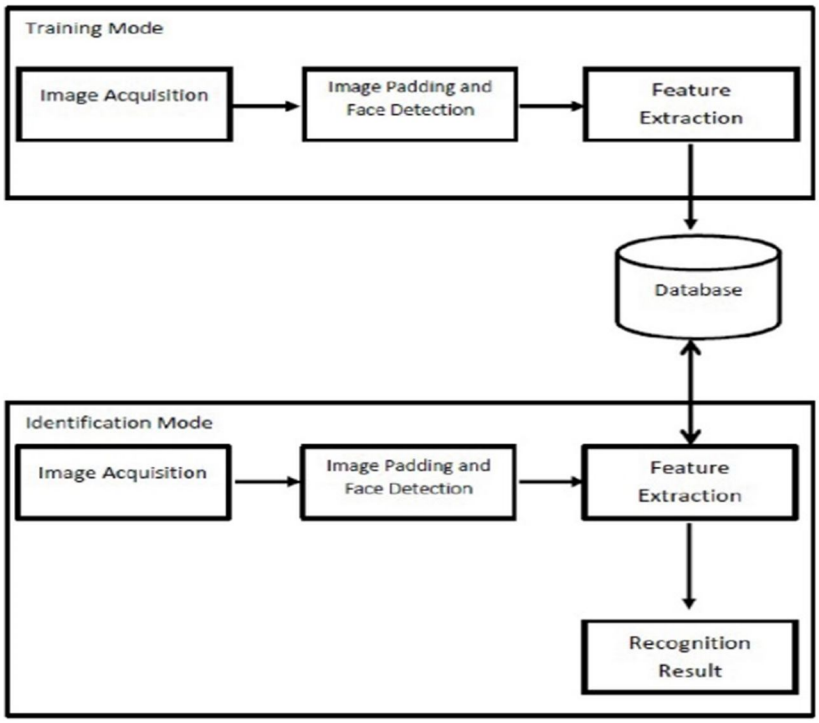

Fig 2. Biometric Attendance System Working

VI. IMPLEMENTATION

The Proposed System has been implemented with the following steps:

A. Register for new student registration using student id and name.
B. Generate faces for new user registration through webcam.
C. Face images will be generated in various angles for identification of person.
D. Train the model after generation of faces.
E. All the details of registered students will be stored students in csv file.
F. After registration and training of model for attendance of the students will be done automatically next time the student face is recognised through webcam and details of the students will be verified with the registered student.
G. If details match identification and attendance will be done automatically.
H. After attendance is done students detailed will be displayed along with name, date and time.

VII. ADVANTAGES

A. Increased Productivity

With biometric clocks in place, the need to keep time manually is eliminated. This saves employees time, reduces staffing overhead and provides an accurate picture of labor data to the payroll department.

B. Increased Return on Investment (ROI)

When a company implements the use of a biometric time clock, it will help it achieve a positive ROI.
This is done by eliminating employee theft, eliminating buddy punching and a number of other problems caused by loopholes and inaccuracies in the older types of attendance and time keeping systems.

C. Enhanced Job Satisfaction

There are some situations where employees must work overtime in certain situations so their dedication towards work must be recognized this is possible due to biometrics.

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VIII. CONCLUSION

In order to reduce the faculty effort and to manage the time we proposed the Biometrics Attendance System Using Face Recognition. The system takes attendance in a very effective manner automatically through facial recognition improving the efficiency in attendance system than the traditional manner.

REFERENCES

[1] Michal Dolecki, Pawel Karczmarek, Adam Kiersztyn, Witold Pedrycz , “Face recognition by humans performed on basis of linguistic and neural network”, Neural Networks (IJCNN)2016 International Joint Conference.
[2] Samuel Lukas, Aditya Rama Mitra, Ririn Ikana Desanti, Dion Krisnadi, "Student Attendance System in Classroom Using Face Recognition Technique", Conference Paper Oct 2016.
[3] M. Mazloom and S. Ayat, “Combinational Method for Face Recognition: Wavelet, PCA and ANN,” in 2008 Digital Image Computing: Techniques and Applications, 2008.

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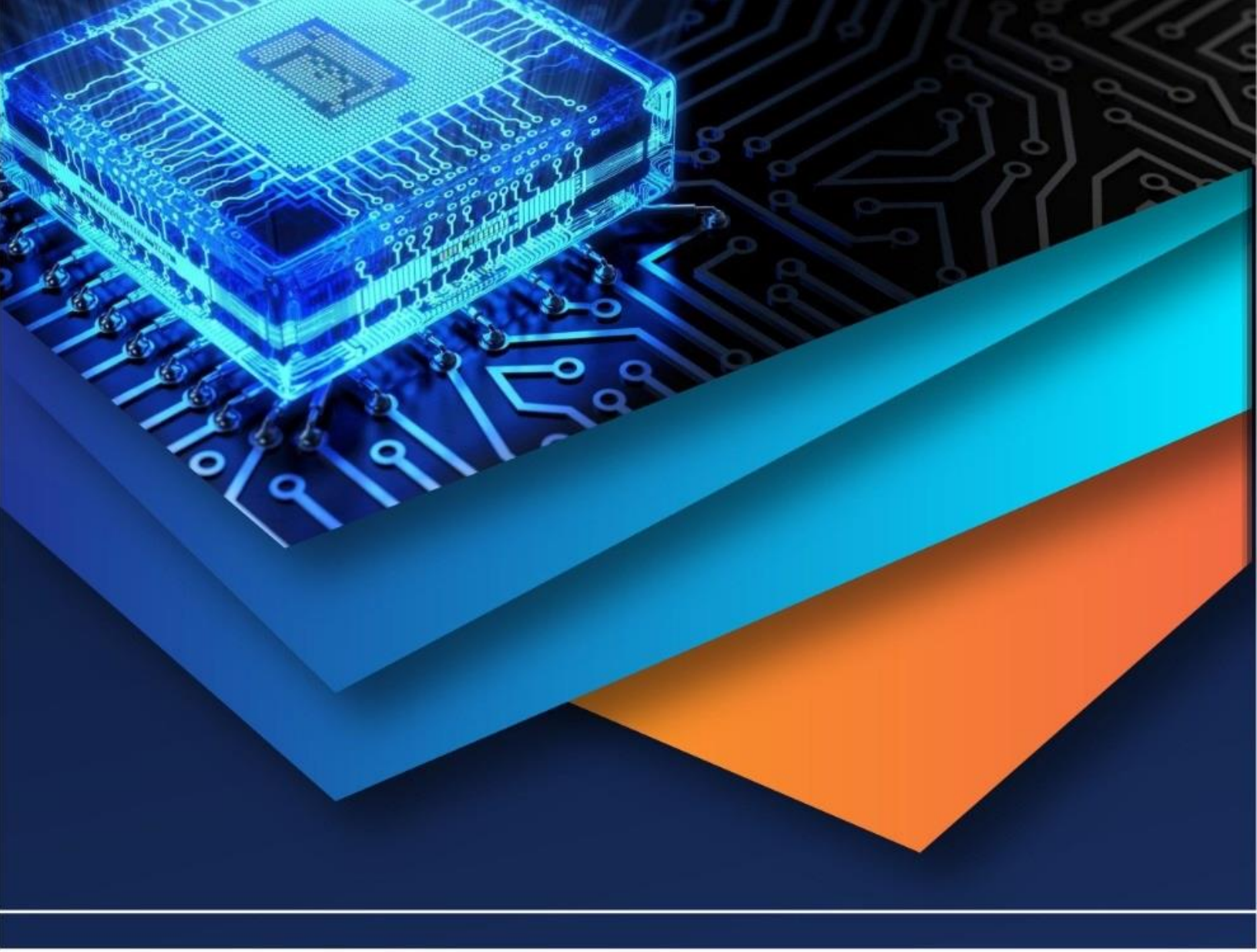

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