SMART ATTENDANCE SYSTEM USING FACE RECOGNITION

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ABSTRACT

Our undertaking expects to plan a face recognition participation framework in view of profound learning calculations. The distinguishing feature of the human body that makes someone particularly recognizable is their face. Involving the facial qualities as biometric, a facial identification plot is executed. Maintaining the participation record for daily exercises is a challenging task. To determine this issue, brilliant and auto participation the board framework is being used. However, validation is a significant issue in this framework. With the use of biometrics, the innovative participation framework is primarily carried out. One of the biometric methods that will be used with this framework is face recognition. In several of these applications, such as video monitoring and CCTV filming systems, a collaboration between PC and individuals, and access frameworks that provide inside and organizational security, facial recognition is being used extensively as a great component of biometric verification. We have utilized profound learning procedures to foster this framework to distinguish faces in pictures and profound learning technique is utilized to figure and contrast highlight facial of understudies to remember them. Our framework is proficient to distinguish different appearances progressively.

KEYWORDS

Attendance system, Face recognition attendance system, Smart Attendance

I. INTRODUCTION

The brilliant approach of participation framework is the use of facial recognition with the ultimate goal of attendance marking. Compared to other methods, face recognition is faster, more accurate, and less likely to require intermediate intervention. Face identification provides uninvolved ID,
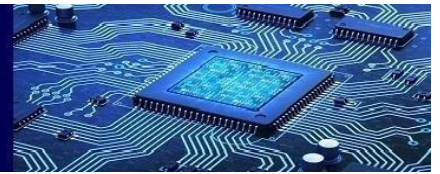
which means that the person being recognised does not have to make any movements to be recognised. The Open CV-based facial recognition method has been suggested for this project. This model handles a camera that captures an input image, a calculation for separating a face from an input image, encoding and recognising the face, and registering attendance in an excel sheet. The preparation data set is made via preparing the framework with the essences of the approved understudies. The trimmed pictures are then put away as a data set with individual labels.

The principal objective of this venture is to offer framework that improve and computerize the most common way of recording and following user attendance through face recognition innovation. Our framework utilizes face acknowledgment way to deal with lessen the blemishes of existing framework with the assistance of AI. It is biometric innovation to recognize or confirm an individual from a computerized picture. This undertaking is utilized

to make the attendance marking and the executives framework is proficient, efficient, straightforward and simple. It is utilized to lessen manual interaction mistakes by give mechanized and a solid participation framework utilizes face acknowledgment innovation. This task means to expand protection and security which user can't introducing himself or his

companion while they are not. It Gives a significant participation administration to everyone and to lessen the responsibility of individuals.

II. LITERATURE SURVEY

1. A Face Recognition attendance system with GSM notification

Kennedy Okokpujie, Etinosa NomaOsaghae, Samuel John, Kalu-Anyah Grace, Imhade Okokpujie gave a Face recognition attendance Framework GSM Notice. This framework utilizes the Viola Jones calculation. This calculation utilized to identify faces. Likewise, Fisher faces calculation was utilized to make examples of the faces which were gotten. That made layouts put away in the data set. This framework utilized library which is OpenCV and utilized Programming Advancement Pack (SDK) to make the graphical UI.

2. Real-Time Smart Attendance System using Face Recognition Techniques

Shreyak Sawhney, Karan Kacker, Samyak Jain, Shailendra Narayan Singh, Rakesh Garg use face identification and recognition strategy utilizing convolution Neural Network and Principal Component Analysis (PCA) yet utilizing two camera some camera is utilized for the face detection and recognition at the entryway of study hall and the camera is utilized at

inside the classroom for actually taking a look at intermediary participation.

3. Automatic attendance management system using face detection

E. Varadharajan, R. Dharani, S. Jeevitha, B. Kavinmathi, S. Hemalatha use Eigen Faces, Eigen Weight algorithms for face detection. They use the camera detention, the picture and then system crop the faces of users and tie the faces with user database.

4. Attendance monitoring system using facial recognition with audio output and gender classification

S Poornima, N Sripriya, B Vijayalakshmi, P Vishnupriya use Viola Jones calculation and Principal Component Analysis(PCA) for the face acknowledgment and they additionally utilize the gender classification and Voice change module. After the face detection and recognition the framework utilize the Microsoft Speech API interface for report the missing user names this can act as a cross check.

5. Automated Attendance Marking and Management System by Facial Recognition Using Histogram

Jenif W.S. D'Souza, S. Jothi, A. Chandrasekar developed this framework checked user attendance naturally by the camera which catches the photograph of students in the class. This frameworkutilizes the calculation called Histogram. Histogram calculation utilized for face identification reason. In this calculation, the face picture is changed over completely to lattice structure. Histogram are utilized to perceive the specific countenances. This framework defeats the issue of tedious.

III. EXISTING SYSTEM

With regards to manual attendance framework, these are customary frameworks in which representatives finish up their participation sheets physically. This manual participation framework, notwithstanding, requires steady human management. Information is recorded physically, it very well may be effectively controlled, they might put some unacceptable data. Because of the way that the information is physically recorded, it tends to be defiled without any problem. Representatives are in many cases acquainted with the manual record sheet that keeps up with and tracks information. In this sense, this framework is very advantageous to them. There is no requirement for a specialist to carry out it.

DISADVANTAGES OF EXISTING SYSTEM

- Manual attendance system has the high chance of human blunder, as the information is recorded physically, it tends to be handily controlled.
- The manual strategies for acquiring participation are incapable and escaping new advancements.
- Recording participation physically is very tedious.

- Manual attendance system is tormented by amigo punching and time-robbery.

IV. PROPOSED SYSTEM

The proposed framework is extremely basic, easy, and reasonable with clear activities. A facial acknowledgment participation framework consolidates facial acknowledgment innovation to perceive and check a facial element and to naturally record participation. Face acknowledgment is utilized all over the place. It is a high level, robotized, and reasonable ID framework that can recognize an individual by facial elements. Face recognition attendance system utilizes a computerized camera to catch the picture of the face, a PC for handling and investigation and a result gadget for showing the recognizable proof outcome.

ADVANTAGES OF PROPOSED SYSTEM

- Facial recognition attendance system is a fast and productive confirmation framework.
- Face recognition attendance system is quicker and more helpful contrasted with other biometric advances like fingerprints or retina filters.
- Face recognition is a more exact method for recognizing people.
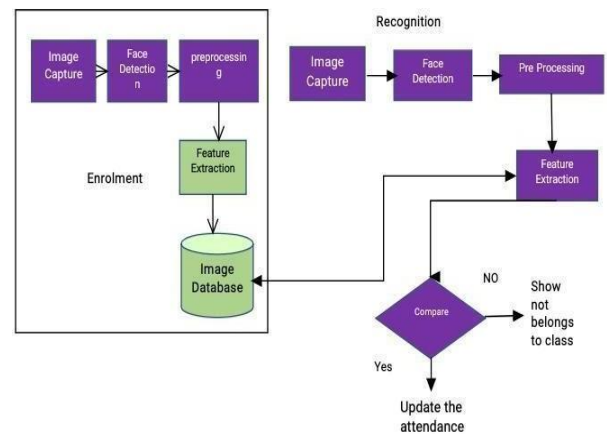- Face recognition innovation is viable and coordinates effectively with most security programming.


Fig. 1 Architecture Diagram

V. MODULES

ACQUISITION OF IMAGES

A high definition camera that is positioned in the classroom is used to take pictures. The system receives this image as input.

CREATION OF A DATASET

A student data set is created before the recognition process. A dataset was only created to train this system. A dataset of students has been created that contains their name, roll number, and images of the kids in various poses and variants. In order to increase accuracy, each pupil should have at least 50 photographs shot. When we register student data and visuals in our system to create a dataset, deep learning is used to each face to compute facial attributes and store in student face data files to remember that face in the recognition process. Every image that is captured
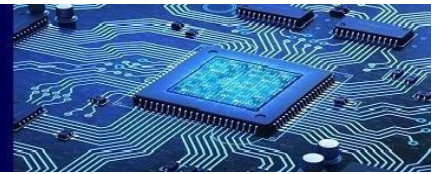
during registration goes through this process.

FACE DETECTION

To identify facial expressions There are 68 tourist attractions to consider. Faces are recognized with the help of these milestones. Haar classifiers were used for facial identification. It is an AI-based technology that creates a fountain capability from a large number of positive and negative images. This is then applied to other images in order to recognize them.

These are the classifiers. essentially the Subtraction of the number of pixels in the dark region from the number of pixels in the white region. It was thought to be challenging to apply 6000 components to each window outline. Classifier fountains, a series of phases, were also included.

EXTRACTION OF A FEATURE

For the purpose of feature extraction, gabor filters are employed to hold the features of the face at various angle s crucial because a good f should pick a function that

VI. RES

OUTPUT:

changes in occlusion, lighting, context, and posture. 2D Gabor filters are used to correct spatial distortions brought on by changes in location and light.
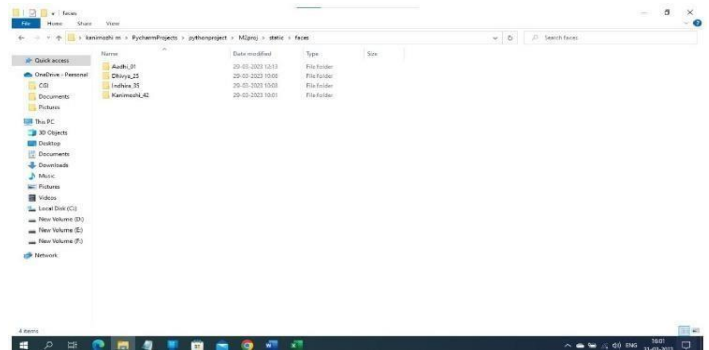
COMPARING THE FACES

This is the last step in the face recognition procedure. Deep metric learning, which is very accurate and capable of producing feature vectors with real values, is one of the best learning techniques. Our approach validates the faces by creating an embedding (ratification) for each one. The internal Euclidean distance between each face in the dataset and the face in the image iscalculated by the compare faces function. The current image will proceed to it meets the 60% dataset.
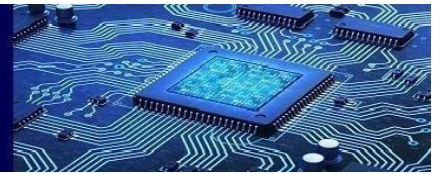

Fig. 2   Fig. 3 Faces Folder Home

REFERENCE

[1] K. Okokpujie, E. Noma-Osaghae, S. John, K. - A. Effortlessness and I. Okokpujie , "A face recognition attendance system with GSM notification," In IEEE third Global Meeting on Electro-Innovation for Public Turn of events (NIGERCON), 2020.

[2] S. Sawhney, K. Kacker, S. Jain, S. N. Singh and R. Garg, "Real-Time Smart Attendance System using Face Recognition Techniques," In 9th International Conference on Cloud Computing, Data Science & Engineering (Confluence), Noida, India, 2019.

[3] E. Varadharajan, R. Dharani, S. Jeevitha, B. Kavinmathi and S. Hemalatha, "Automatic attendance management system using face detection," In Online International Conference on Green Engineering and Technologies (IC-GET), Coimbatore, India, 2016.

[4] S. Poornima, N. Sripriya, B. Vijayalakshmi and P. Vishnupriya, "Attendance monitoring system using facial recognition with audio output and gender classification," In International Conference on Computer, Communication and Signal Processing (ICCCSP), Chennai, India, 2017.

[5] J. W. S. D'Souza, S. Jothi and A. Chandrasekar, "Automated Attendance Marking and Management System by Facial Recognition Using Histogram," In 5th International Conference on Advanced Computing & Communication Systems (ICACCS), Coimbatore, India, 2019.

[6] Folasade O. Isinkaye, Jumoke Soyemi, Olamide I. Arowosegbe, "An Android-based Face Recognition System for Class Attendance and Malpractice Control", IEEE,2020.

[7] Yuang Wu, Tianyi Shi "Design of Attendance System Based On Face Recognition and Android platform", IEEE,2020.

[8] Shizhen Huang, Haonan Luo "Attendance system based on Dynamic Face Recognition",IEEE,2020.

[9] Refik ,Muhammed Tanriverdi "Face Recognition- Based Mobile Automatic Classroom Attendance Management System",IEEE,2017.

[10] Gowtham , Prosenjit Das, Aurobindo "Smart Attendance Monitoring System: A Face Recognition based Attendance System for Classroom Environment",IEEE,2018.

[11] Sujit kumara Gupta, Ashwin T S, Ram Mohana Reddy "Computer vision based unobtrusive classroom attendance management system",IEEE,2018.

[12] Narayana Darapaneni, Aruna

Kumari, Karthikeyan G "Automatic face detection and recognition for Attendance Maintenance", IEEE,2020.

[13] Chandra, Winanti, Meyliana "Application of Face Recognition Technology for classroom Electronic attendance management system",IEEE,2020.

[14] Tarik Hachad, Abdelalim Sadiq , Fadoua Ghanimi "Student's attendance management using deep facial recognition" ,IEEE,2020.

[15] "An efficient automated Attendance management system based on Eigen Face recognition," E. Rekha and P. Ramaprasad, in 2017 7th International Conference on Cloud Computing, Data Science& Engineering- Confluence, (pp. 605-608). IEEE, 2017.

[16] "Design of Time Attendance System in Coal Preparation Plant Based on Face Recognition," Xiucai Guo and Shasha Zhang, IEEE, 2019.

[17] M. A. Mohandes, "A class attendance management system based on NFC mobile devices," Intelligent Automation & Soft Computing, 23(2):251-9, 2017.

[18] Kumar NA, Swarnalatha P, Chowdary P, Naidu JK, and Kumar KS. "Smart Attendance Marking System Using Facial Recognition". 2019 Research Journal of

Science and Technology, 11(2):101-108.

[19] K. Puthea, R. Hartanto, and R. Hidayat, "A review paper on an attendance marking system based on face recognition," In 2017 2nd International Conferences on Information Technology, Information Systems, and Electrical Engineering (ICITISEE), (pp. 304-309). IEEE, 2017.

[20] S. Rahman, M. Rahman, and M. M. Rahman, "Automated student attendance system using fingerprint recognition", Edelweiss Applied Science and Technology, 1(2):90-94, 2019.