

# Face Based Attendance System Using Convolutional Neural Network

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**Abstract:** *Over the course of the last years Automatic face acknowledgment (AFR) advances have shown enhancements in execution. Subsequently these frameworks are generally utilized for security and business applications. A computerized framework for face acknowledgment during a continuous foundation for a college to check the participation of their workers. So Smart Attendance utilizing Real Time Face Recognition might be a world arrangement which accompanies everyday exercises of taking care of representatives. The errand is incredibly troublesome on the grounds that the significant time foundation deduction during an image stays a test. To identify ongoing face are utilized and a simple quick Principal Component Analysis has will not to perceive the appearances identified with a high precision rate. The matched face is utilized to stamp participation of the laborer. Our framework keeps up with the participation records of representatives naturally. It becomes troublesome errand to enter participation section physically in logbooks. Consequently, we have accompanied a module in which participation of worker will be checked naturally by recognizing their face by utilizing face acknowledgment procedures. This enlisting might be a onetime cycle and their face will be put away inside the data set. During enlisting of face, we require a framework since it's an onetime cycle. You can have your own roll number as your worker id which can be one of a kind for each representative. The presence of each and every worker will be refreshed during a data set. Proposed framework results demonstrated that it has preferable execution over manual participation framework Attendance is set apart after worker recognizable proof. This item gives undeniably more arrangements with exact prompts client intelligent way as opposed to existing participation and leave the executives frameworks.*

**Keywords:** Attendance, Face Recognition, CNN (Convolutional Neural Network), etc.

## I. INTRODUCTION

Keeping up with the participation is critical through and through the establishments for actually looking at the exhibition of workers (4). Each foundation has its own strategy during this respect. Some are gauging participation physically utilizing the old paper or document-based approach and a couple of have taken on strategies for programmed participation utilizing some biometric methods. Yet, in these strategies representatives need to anticipate while in causing a line at time they to enter the workplace. Numerous biometric frameworks are accessible yet the key confirmations are same is every one of the procedures. Each biometric framework comprises of enrolment process during which novel highlights of an individual is put away inside the data set then there are cycles of recognizable proof and confirmation. These two cycles analyse the biometric component of a person with recently put away layout caught at the hour of enrolment. Biometric layouts are frequently of the many sorts like Fingerprints, Eye Iris, Face, Hand Geometry, Signature, Gait and voice.

Our framework utilizes the face acknowledgment approach for the computerized participation of representatives inside the workplace room climate without representatives' mediation (2). Face acknowledgment comprises of two stages, in drive faces are distinguished inside the picture then these identified countenances are contrasted and the data set for check. Various strategies are proposed for face location i.e., Ada Boost calculation, the Float Boost calculation, the S-Ada Boost calculation Support Vector Machines (SVM), and thusly the Bayes classifier. The proficiency of face acknowledgment calculation is frequently expanded with the quick face identification calculation. In all the above techniques SURF is best. Our framework used this calculation for the discovery of appearances inside the workplace room picture.

Face acknowledgment methods are frequently Divided into two sorts Appearance based which use surface highlights that is applied to entire face or a few explicit Regions, other isFeature based which utilizes mathematical elements like mouth, nose, eyes, eye foreheads, cheeks and Relation between them. Factual apparatuses like Linear Discriminant Analysis (LDA), Principal ComponentAnalysis (PCA), Kernel Methods, and Neural Networks, Eigen-faces are utilized for development of face formats.



## **II. LITERATURE SURVEY**

Proposed how of gauging participation utilizing educator's cell phone has been introduced during thispaper which is paperless, speedy, and precise. An application programming introduced inside the educator's cell phone empowers it to scrutinize understudies' cell phone by means of Bluetooth association and, through move of understudies 'cell phones' Media Access Control (MAC) locations to the teacher's cell phone, presence of the researcher are frequently affirmed. Additionally, point by pointrecord of an understudy's participation can likewise be created for printing and documenting, if necessary [1].

In this Paper they planned The Face RecognitionGrand Challenge (FRGC) is intended to understandthis exhibition objective by introducing to analysts asix-try challenge issue close by information corpus of 50,000 pictures. The information comprises of 3D sweeps high goal still symbolism taken under controlled and uncontrolled circumstances. They defeated the test issue, information corpus, and presents pattern execution and starter results on normal insights of facial symbolism [2].

Proposed a remote iris acknowledgment participation the executive's framework which was planned and carried out utilizing Daugman's calculation (Daugman, 2003). This framework ~~had~~ biometrics and remote strategy addresses the issue of fake participation and along these lines the trouble of laying the comparing organization. They accepted that this framework makes the clients' attendances all the more effectively and really [3].

CCTV film is generally used in the court to helppicture the wrongdoing being referred to and to helprecognize the wrongdoer. Sadly, the majority ofreconnaissance cameras produce such low-quality pictures that the errand of recognizing people is frequently very troublesome. This study pointed toward deciding if the errand of recognizing the wrongdoer in CCTV film was one which a jury ought to be equipped to attempt to, or whether master proof would be useful in such cases. The capacity of potential jury individuals, the general public, was tried by requesting that members assume the part of a jury part through a web overview.

Potential jury individuals saw CCTV during which a reenacted offense occurred, and were in this way requested to match actually pictures of a respondentto the wrongdoer to embrace to decide whether theywere equipped and guaranteed about making a judgment on whether the litigant carried out thewrongdoing.

Factors, for instance, age, sexual direction and calling of the potential jury people were considered, similarly as the kind of bad behavior completed, to develop accepting that these expect any part in decision by potential jury people. These factors didn't appear to accept a gigantic part; in any case, sureness was moreover investigated and

it ended up being extraordinarily evident that this was a component that ought to be contemplated while choosing the essential for face responsibility in facial assessments [4].

The particle smoothing out with flexible consolidated dissemination-based histogram improvement methodology (PACDHE) for additional fostering the continuous video quality. At first the accounts are accumulated; each oncoming edge has been poor down and racket present in the video frame is discarded by applying the non-divisional center channel. Starting there ahead, nature of nonstop video is redesigned iteratively by reviewing each pixel present in video frames using the high-level health and joined spread work. This cycle is reiterated continually until to overhaul the continuous video frames separation and quality. Then, the introduction of the structure is researched by using CV electronic video informational collection and the efficiency is dissected to the extent that apex sign to upheaval extent (PSNR), Absolute Mean Brightness Error (AMBE) and Entropy. The test outcomes of PSO are differentiated and inherited computation-based strategy and saw that PSO beats the GA approach and the ongoing histogram balance approach and the ongoing histogram evening out approaches [5].

In human machine affiliation modified talk feeling affirmation is yet troublesome yet huge task which gave close thought in stream research area. As the gig of talk is a rising in human PC interface. Talk is engaging and strong medium by virtue of its couple of features conveying disposition and sentiments box talk is reachable. Here audit is overseen using Gaussian blend model and Hidden Markov model classifiers used for ID of 5 fundamental energetic states of speakers as shock, happiness, hopeless, shock and impartial. In this paper to see sentiments through talk various features, for instance, prosodic components like pitch, energy and apparition components, for instance, Mel repeat cestrum coefficient were isolated and considering this component's energetic portrayal and execution of collection using Gaussian mix model and Hidden Markov Model is discussed [6].

III. METHODOLOGY

The proposed framework is utilized for gauging participation by involving face acknowledgment and dealing with the participation in reasonable conditions like universities and workplaces. The framework design depends on programming based yet in addition can be based on Raspberry Pi Camera Module V2 connected to Raspberry Pi3 and it tends to be set where individuals enter the workplace/study hall. Camera Module is utilized to catch video from. Which pictures of human appearances is extricated? Then, at that point, face acknowledgment happens and it consequently confirms with the current information base through library documents present in OpenCV. Face Recognition is by and large further developed and productive than different frameworks. The means included are given as follows.

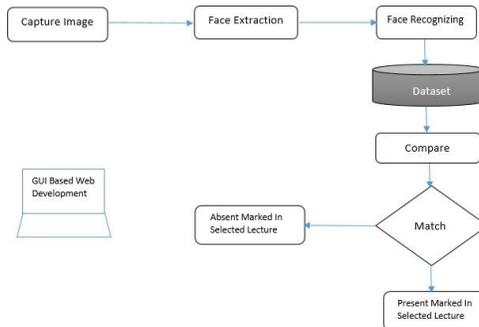


Figure: Proposed System Architecture

1. Capturing Image from Video: -

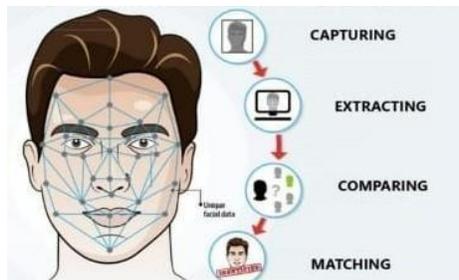
The camera module can be put in a locale where individuals go into school or office and video is taken inside the distance under 5 meters. A camera is utilized for taking video which contains many casings from which any of the edges can be utilized for face acknowledgment and denoting the participation.

**2. Detecting Face: -**

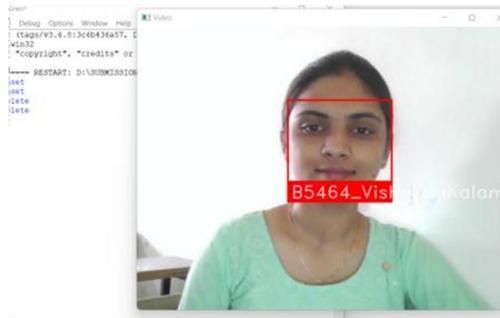
Picking a productive calculation for face acknowledgment is basic in this proposed work. There are many face recognition calculations accessible in OpenCV, for example, Eigenfaces, Fisher appearances and Local Binary Pattern Histograms. Considering the requirement for the constant acknowledgment a calculation which has been selected is the Haar Cascade Algorithm/CNN [5] for face location and acknowledgment. It is accessible in OpenCV source library [6] and has ended up being vigorous [7].

**3. Pre-processing: -**

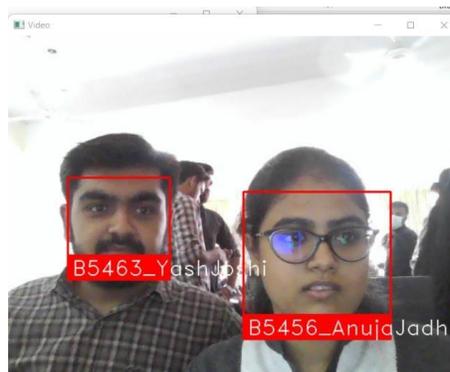
Since a picture might contain superfluous foundation clamors and components other than faces eliminating those elements is significant. Subsequently, highlight extraction is key for lessening the picture to just a face accessible in the picture. By this strategy, the picture is decreased to a size of 150x150. Histogram leveling is performed on the diminished picture and subsequently the picture becomes simpler to process.



**IV. EXPERIMENTAL AND RESULT**



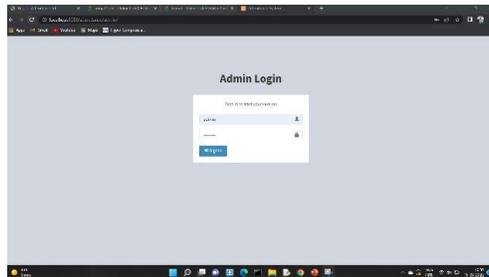
Face and Name Detected 1



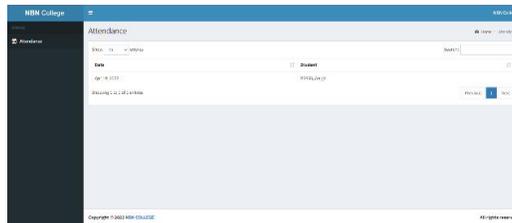
Face and Name Detected 2



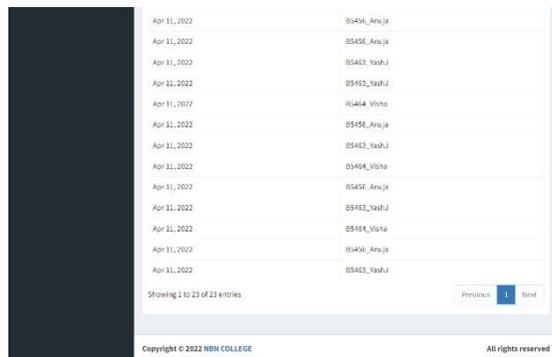
Face and Name Detected 3



Login Page



Data Stored 1



Data Stored 2

### V. CONCLUSIONS

Mechanized Attendance System has been imagined for the point of lessening the mistakes that happen inside the conventional (manual) participationtaking framework. The point is to mechanize andmake a framework that is valuable to the association like an establishment. The effective and exacttechnique for participation inside the workplace climate which will supplant the old manual strategies.This strategy is adequately secure, dependable and accessible to be utilized. No requirement for specific equipment for introducing the framework inside the workplace. It is frequently built utilizing a camera and PC.

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