

# Login and Information Retrieval System through Face Recognition

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**ABSTRACT:**-During this pandemic it is an important measure to maintain contactless employee monitor system. Having worker attending management system is to stay correct track of the operating hours of the workers. Taking and keeping worker attending info in surpass sheet are often wasting of your time for hour worker in order that good attending system victimization face recognition and identification will facilitate saving time, cost, pretend attending and accuracy.The major objective of this project is to use Deep Neural Network and Machine Learning techniques in work. A facial recognition system could be a technology capable of matching somebody's face from digital image against a information of faces. Our project makes use of machine learning associate degreed direction system similarly as Deep Neural Network to map the faces and note the worker login details that makes the our system generates an minatory sound if that person not belongs to it company. domain and conjointly our system accustomed retrieve the non-public info through face recognition Deep Learning could be a category of machine learning algorithmic program that uses multiple layers to increasingly extract higher-level options from the raw input.

**KEYWORDS:** Face Recognition, Machine Learning, Deep Neural Network ,caffe model(DNN Face Detector in OpenCV)

## I. INTRODUCTION:

Attendance following is significant to any or all organizations regardless of size and business. The management should track and record attending accurately because it is directly connected to different unit of time parts like Payroll, leave, etc. The group action management system has seen a big amendment over a brief amount. From manual registers to advanced sensible group action chase mechanisms, technology has reworked the means organizations manage their employee's work temporal arrangement. once geotagging and geo-

fencing, biometric identification is that the new generation group action chase system wide accepted globally.traditional methodology of group action marking isa tedious task in schools} and colleges. it's additionally an additional burden to the colleges United Nations agency ought to mark group action by manually vocation the names of scholars which could take regarding five minutes of entire session. this is often time intense. There ar some probabilities of proxy group action. Therefore, several institutes started deploying several different techniques for recording group action like use of frequency Identification (RFID) [3], iris recognition [4], fingerprint recognition, and so on. However, these systems ar queue primarily based that may consume longer and ar intrusive in nature. Face recognition has set Associate in Nursing vital biometric feature, that will be simply available and is non-intrusive. Face recognition primarily based systems ar comparatively oblivious to varied facial expression. Face recognition system consists of 2 categories: verification and face identification. Face verification is Associate in Nursing 1:1 matching method, it compares face image against the example face pictures Associate in Nursingd whereas is an 1:N issues that compares a question face pictures [1].

## why is it additional relevant than ever throughout the coronavirus pandemic?

China could have already got been home to most of the world's most monitored cities before the coronavirus pandemic, however police work technologies, and especially biometric identification software package, have seen a replacement surge in quality as governments scramble for methods to spot potential cases and maintain security whereas reducing human-to-human contact.Around the world, the factitious intelligence-based technology has been progressively deployed by enforcement and border management to secure access and improve police

work. But this is often jointly not while not argument. within the wake of the Black Lives Matter protests that swept the North American country earlier this year, many corporations together with Microsoft, IBM and Amazon declared they might either pause mercantilism police their biometric authentication systems or stop manufacturing them entirely Here's a outline of what we all know concerning biometric authentication technology.

#### How will biometric authentication work?

Facial recognition systems involve the identification of individuals from a info of pictures, together with still pictures and video. Deep learning – a set of computing – accelerates a system's face-scanning capabilities, because it learns a lot of concerning the info it's process. Such systems need large amounts of data to become quicker and a lot of correct.

Essentially, these systems generate a alleged "unique face print" for every subject by reading and measurement dozens to thousands of "nodal points", together with the space between eyes, the dimension of a person's nose and depth of the attention socket. With a network of police work cameras, recognition systems method a wider vary of options, together with subjects' height, age and color of garments.

#### Advantages of Face Recognition Time Tracking:

**Automated time chase system:** Automation simplifies time chase, and there's no ought to have personnel to watch the system twenty four hours each day. To err is human, and with machine-driven systems, human error is eliminated. A time and attending system victimization biometric authentication technology will accurately report attending, absence, Associate in Nursinging overtime with an identification method that's quick similarly as correct.

**Labor price savings:** Biometric authentication code will accurately track time and attending while not human error. It keeps track of the precise range of hours Associate in Nursinging worker is functioning, which may facilitate save the corporate cash. you'll ne'er ought to worry concerning time fraud or "buddy punching" with a biometric authentication time chase system.

**Tighter security:** Facial biometric time following permits you to not solely track staff however jointly add guests to the system in order that they may be half-tracked throughout the worksite. Access may be denied to anyone not within the system. If an occurrence ought to occur, automatic face recognition computer code will give proof for associate investigation with a scanned image of someone or persons UN agency have entered the world.

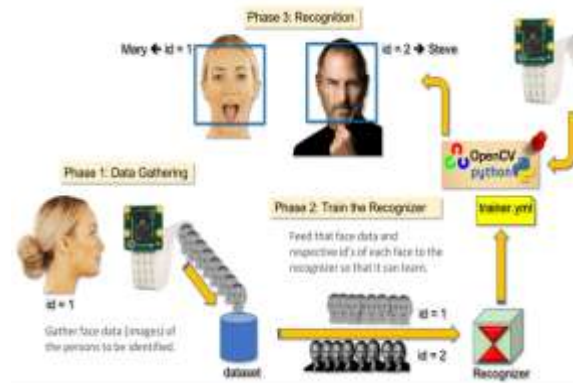
**Time saving and reduced contagion:** Once contagious diseases like colds and viruses unfold throughout the hands, it will increase the incidence of worker absences and considerably scale back productivity. With automatic face recognition, staff will enter and leave the power in significantly less time. there's no have to be compelled to bit the surface of the system to record or out. this protects time, additionally as minimizing the unfold diseases thanks to physical contact.

**Ease of integration:** Biometric automatic face recognition technology may be simply programmed into some time and attending system.

#### SYSTEM DESCRIPTION:

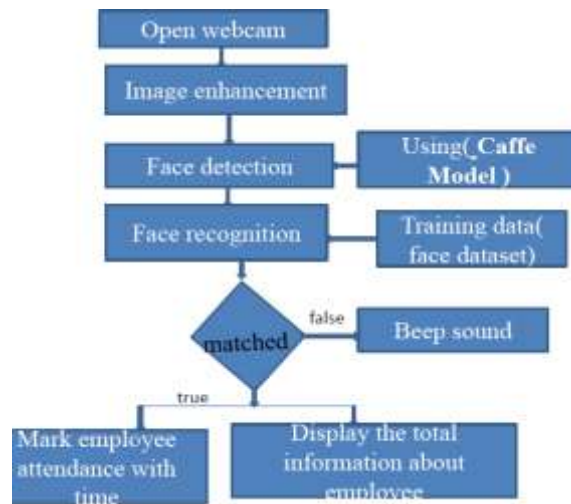
The system consists of a camera that captures the photographs of the worker and sends it to the image improvement module. when improvement the image comes within the Face Detection and Recognition modules then the attending is marked on the information server.

At the time of entry, templates of face pictures of individual staff square measure hold on within the Face information. Here all the faces square measure detected from the input image and therefore the algorithmic rule compares them one by one with the face information. If any face is recognized the attending is marked on the server from wherever anyone will access and use it for various functions. and jointly our system wont to retrieve the non public data through face recognition .in figure(1) there is two faces first gather that information and using recognizer to recognize that faces using encoding values and in figure(3) represents how to detect the face and split that data into training and testing data using training data we detect the face in testing data and observe the figure(2) represents the complete flow graph of our system



Figure(1).how to recognize the face

**FLOW CHART:**



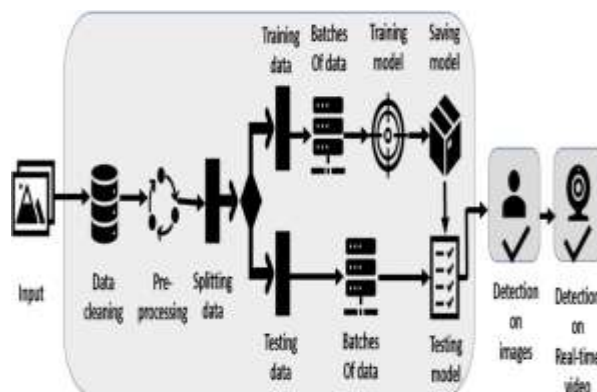
figure(2).Flow graph

**II. METHODOLOGY:**

**Caffe Model(DNN Face Detector in OpenCV):**

It's a Caffe model that is predicated on the one Shot-Multibox Detector (SSD) and uses ResNet-10 design as its backbone. it absolutely was

introduced post OpenCV three.3 in its deep neural network module. there's additionally a amount Tensorflow version which will be used however we are going to use the caffe model



Figure(3).How to detect the face

**FACE DETECTION:**Initially face observeion rule was tested on type of pictures with totally different face positions and lighting conditions and so rule was applied to detect faces in real time video. rule is trained for the photographs of faces and so applied on the category space image for detection of multiple faces within the image

**FACE RECOGNITION AND ATTENDANCE:**After the face detection step

successive is face recognition. this may be achieved by cropping the primary detected face from the image and compare it with the information. this can be referred to as the choice of region of interest. during this manner faces of scholars area unit verified one by one with the face information mistreatment the Eigen Face technique and group action is marked on the server.

**EXPERIMENTAL RESULT:**[1].

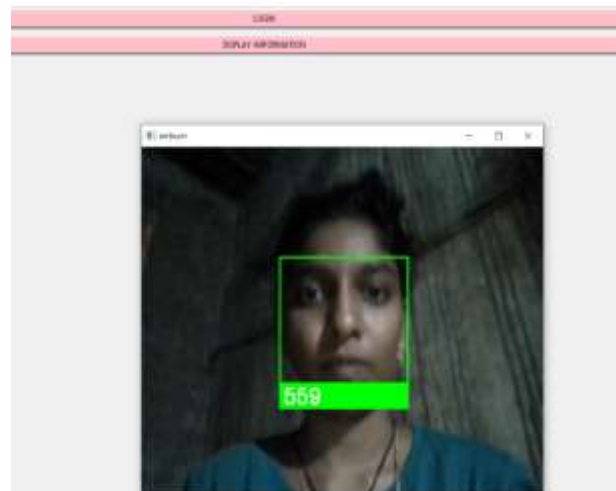


Figure(4).Login and display button window

After execute our source code it will display the window with login and display-information button

**AFTER CLICK ON LOGIN BUTTON :**

[2].



Figure(5).After click on login button

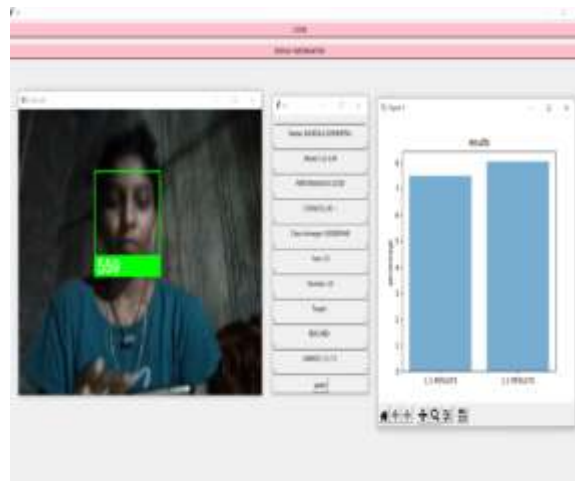
in figure(4) there is login button is after click on the login button.web cam is automatically opened then detect that face and recognition that face and also display the face location using square box

```
File Edit Format View Help
NAME, TIME
DIVYA TEJASWI, 15:45:27
SUSHIMITHA, 16:46:28
```

Figure(6).CSV file

In the figure(5) we detect and recognize that face after recognition our system automatically store the name and time in CSV file

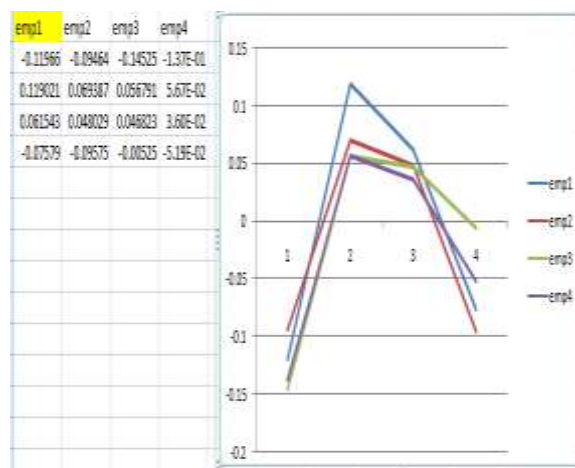
**AFTER CLICK ON DISPLAY INFORMATION BUTTON:**  
 [3].



Figure(7).Display the information with performance graph

After click on the display-information button automatically open the webcam .after recognition it display the all information with

performance graph.figure(6) store the attendance using that attendance we can display information in figure(7)



Figure(8).Encoding values graph

figure(8) represents encoding values of each face. we are taking some sample faces and unique encoding values generated by our algorithm partial values are plotted as graph using that graph and values our system display the best match

### III. CONCLUSION:

Automated attending System has been pictured for the aim of reducing the errors that occur within the ancient (manual) attending taking system. The aim is to modify associated build a system that's helpful to the organization like an institute. The economical and correct methodology of attending within the workplace atmosphere which will replace the recent manual strategies. This methodology is secure enough, reliable and out there to be used. No want for specialised hardware for putting in the system within the workplace. It are often made employing a camera and laptop. the author of this paper would like to implement in future For security reasons, we are able to use detection & recognition system. to spot culprits on bus stations, railway stations seven alternative public places, we are able to use this method. this can be assist to the police. during this system, we'll use GSM module. Suppose if offender is detected, then detected signal are often transmitted mistreatment GSM module to the central room of police office. With the assistance of ISDN range of GSM, offender living space are going to be recognized

### LITERATURE SURVEY:

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