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Indetifying Vaccinated People System Using Cloud

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Abstract: ***In the Covid situation many Colleges, Company, Hospital and university have only allowing student who got vaccination as by the rule of govt of India but to check all the student one by one with their covid vaccination will take a lot of time as it will take more than two or three staff. so, Our project is to help the college by giving then automated status weather the student got vaccinated or not Web app will be used by the institutes to get the information about Students or Employees vaccination status Students or Employees have to enter their name, select department or enter department id, put phone number, select 1st or 2nd dose of vaccination. Then they have to upload the vaccination certificate. Then it will ask them to upload a recent photo of theirs without mask. We can also ask them few questions about their health status in past 1 month. Abstract.*** *(Abstract)*

Keywords: Facial Recognition, PCA, LDA, Aws services,

I. INTRODUCTION

To verify whether the person or staff of the college or company has been vaccinated or not the personal staff will be required to have a relevant system for acquiescing and properly managing the record of attendance record frequently for doing this we will have two types of frameworks that can we used the first is Traditional based Verification system (TVS) or Manual based Verification system (MVS) and the second one is Automated verification system (AVS). If we go with MVS the staff member will find that it is practically very difficult to keep up and maintain each and every record of verification for all the students, employees all the time [6]. In-office and college where there is a very high no of an employee or student it becomes a very boring, dull and uninteresting work to see every employee collect their covid report and maintain their record every time when they visit the campus or office and there is high probability of human error and their accuracy will also be not very high therefore to protect our system or process or system we can go with our next framework which will identify the person whether he/she is vaccinated has vaccinated if it is vaccinated the system will allow the personal and it will also mark its logging time in which the employee come in the office and for a student for its attendance with the help of Human Facial Recognition(HMR). This system will usually contain the photograph of all the employees/students who had been vaccinated either fully or partially for doing the HMR.

We will be using two different types of methodologies to deal with the HFR system the first one is a feature-based methodology and the second will be a brightness-based methodology. The Feature-based is a type of methodologies that use the special features present on the face like eye, nose, mouth and some particular special feature hence the calculation part of this process covered only some part of its segments of the image given into the system which had been taken into the system earlier and the next one is feature-based methodology in this methodology we have to merge and integrate all segments of the image it is also called known to be as holistic-based or image-based approach

Because each and every image is taken care into consideration and has to be analysed, inspect, and examine the Brightness-based methodology hence it took more time to perform it, and it as well as its more complicated [6].To make the process go smooth, easy the image has to convert into an undeniable model

II. PROPOSED STATEMENT

The main proposed of this System is to developed a very efficient ,user-friendly system that can help to identifying or recognised whether the following person is vaccinated or not which can be easily access by anywhere from the world for that we have used cloud .All the methods outlined in the above page are automated using different types of Aws services cloud . it can be easily be scalable and its available from anywhere. We have tried to give the accuracy up to 93% for identification of Facial Recognition in the our presented paper we have also taken help from high-level algorithm like as s PCA and LDA for facial recognition .And have used services like Aws recognition, Aws s3 bucket, Aws cognito Aws ec2 instance,

The main motive of the proposed system is To review the existing system that is covid-19 report detection approach .To come up with a better and advance approach for covid-19 report detection approach .To train and implement an advance approach for the covid-19 detection report in a effective way

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III. SYSTEM DESIGN

In the above proposed the client has to give its details like in a web portal given by the company. The fig 1.0 show how our processed system will work there are four parts [3]

A. Database Creation

In the above proposed the client has to give its details like its Name, Date of Birth(DOB),Roll No, Gender, Photo(that has taken recently)and two option weather they are vaccinated or not if they will be given two option one for partially or one dose and second option for fully vaccinated the user has to choose from this two option and has to give its covid-19 vaccinated report and all its details will be saved in Dynamo DB for the databased .In the form it will be mandatory to give photo of the student and if it is vaccinated they should give their covid report . we will also take a form of Acknowledgment which that will stayed that they have given their all their information correctly and if something is wrong, they will be responsible for that for security purpose they will be told to write their covid report no so no other Report will have two covid report on it

B. Face Detection

For the face detection in this paper, we have used a method known as Haar-Cascade Classifier with AWS recognition and Open cv. This algorithm is required to instruct for identifying human facial recognition so that it can be earlier used for human facial detection that is known as feature extraction the instructing data used in this algorithm is an XML file-haarcascade_ frontalface_ default [2].In this system, we will be using detect Multiscale module from OpenCV[which we will take from open cv [3]. has three different types of items to consider such as flow scaleFactor, minNeighbors and reduction . The image scale feature is used to understand how much image size should be reduced in each small image scale Neighbors specify that each rectangular neighbor can have very good quality values usually get a certain face but they can see the quality. in the picture. minSize specifies minimum size of item. automatically, the system is turned off (30,30) [2].

C. Face Recognition

Face recognition is divided into two parts: the command data and the human face viewer. Here instruction data is collected from an existing image creation database where an image like Amazon Rekognition provides an online image viewing API using Image Rekognition. [9]. With the help of Amazon Rekognition, we can easily identify objects, people, text, scenes, and functions in images, and it provides facial analysis and face search capabilities that one can use to find, analyse, and compare faces to verify user, people. calculations, and cases of use of public safety. In this case the lambda function is activated with the uploaded image and covid-19 report and point the images to a special Amazon Rekognition collection for archiving and the same function is stored in DynamoDB as an index-based metadata with data inside DynamoDB and will trigger the message [8]

D. Entry of the staff

In this process every staff or student is allowed to look up in the camera that is installed in the campus It will then matched with the face present in the database then the process is second part that is facial recognition from there it will receive a trigged message if the person is allowed then it would display in the next system that the person is welcome in the college with the blue screen on it and if not, it will display that the person are not welcome with the red screen.

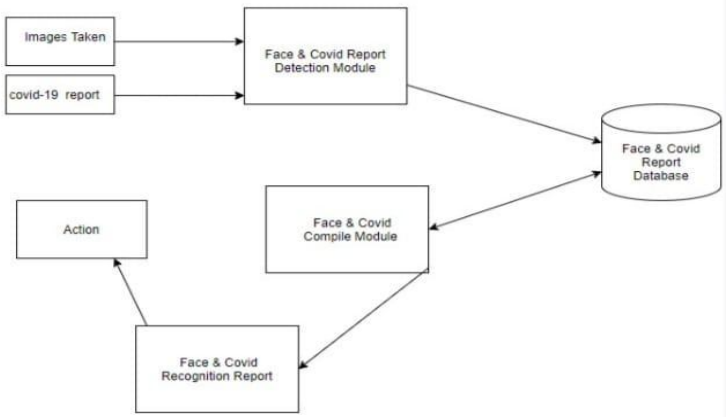


Fig 1.0 Block diagram of System

IV. LITERATURE REVIEW

In [3] the author has made a suggestion of Paradigm for the default presence system. The paradigm was designed to show how facial recognition may be used in conjunction with radio frequency identification (RFID) to identify accredited students and enumerators as they entered and exited the classroom. Each enrolled student's information is kept in the Paradigm. The application also stores data in the attendance log for each student who enrolled in a specific course and gives all relevant information based on their needs. The authors of [4] identified, built, and implemented an iris-based biometrics-based travel system. Attendees were initially requested to register their information as well as their individual iris template. During the event, a robot system photographed each eye of individuals in attendance who were seeing and pointing their iris, as well as conducting comparable searches in the constructed space. It contained a web-based prototype. In this paper, we'll look at [5] the authors proposed a presence system based on visual perception. A different algorithm such as the Viola-Jones features and the Histogram of Oriented Gradients (HOG) and the vector Machine (SVM) segment were used to operate the system. Many real-time situations such as measurement, brightness, closure, and condition were tested by the authors Volume analysis was also performed based on Peak Signal to Noise Ratio (PSNR) values and was initiated and performed with the MATLAB GUI. In [6] The authors presented a visual perception-based presence system. The system was operated using a variety of algorithms, including Viola-Jones features, the Histogram of Oriented Gradients (HOG), and the vector Machine (SVM) section. The authors evaluated a variety of real-world scenarios, including measurement, brightness, closure, and condition. The MATLAB GUI was used to initiate and perform volume analysis, which was based on Peak Signal to Noise Ratio (PSNR) data.. The techniques used in this program are to remove the student's associated facial features and to use the Radial Basis Function (RBF) to distinguish facial features.. The system achieved an accuracy rate of up to 82%. In [7] this paper the authors have talked about the growth and evaluation in the field of technology they had used, such as facial recognition, normalization, facial recognition, and emotional networks. The authors as well as wrote about the strategy through which face detection is done using History of Oriented Gradients, Face alignment is used for landmarks, face extensions using Convolutional Neural Network, and ultimately produce embedding.. Although their system found a small number of false predictions, they achieved an accuracy of more than 95%. In [1] this the author purpose a system for implementing an automated attendance management system for students of a class by making use of face recognition technique using this type of technologies such as Eigenface values, Principle Component Analysis (PCA), and the Convolutional Neural Network (CNN) in this paper the author describes what it is (PCA) and the Convolution Neural network and its real-time existence algorithm. [2] In this paper the author intended a system in which a person's face is found in a live broadcast of a student campus and its presence is marked if the facial expressions found on their faces in this case the author describes the whole process into 4 different stages. Webcam. In [11] this paper the author has purposed a method of Max-Margin Face Detection (MMFD) technique with face detection and model is instructed using the Inception-V3 CNN method of identifying students and according to and using TensorFlow in their research they have learned accuracy of up to 97.6 but the experiment here was done till the 20 so the accuracy may differ if we go with higher data sets and it required a high-definition camera. In [12] in this paper the author has purposed a system an Image processing is based implant system to access patient health records by face recognition on that paper Face recognition is used instead of a unique ID number This program contains a Raspberry pi 3 processor and a webcam used to take pictures. It also uses two different types such as Local Binary Pattern and HAAR Cascade Algorithm. In[13] this paper the authors has developed a system for such type of content-based image retrieval system that can be put into performance in a large image gallery desktop application to allow efficient browsing with the help of two separate search processes; image retrieval based on image and retrieval with text or ticket to this Here the author has used this program integrated with MPEG-7 and Edge Directivity Descriptor is used to take out the characteristic vectors of a particular image from the image database. In [15-20], authors has given various definitions of cloud, and proposed security techniques.

In[10] this paper the author had developed a system that uses Image Processing techniques and an automated travel system where attendance is systematically determined by identifying students' faces. The system has a database for every authorized student when every any unknown face is detected inside the classroom, he/she will be recognized as an intruder and save it and here the author had discussed about algorithms like Viola-Jones and Local Binary Patterns of Histogram (LBPH). In [14] this paper, the author had purposed a system in which a device designed for machine learning called AWS DeepLens will perform deep learning for AI-trained modules. and differentiate with normal The device’s result will inform facial expression information to the user sound. The system Deep learning algorithm success is to be measured in a confusion matrix and its average rate is 76,16% thorough out the problem

In [21] The paper has come with the Image Processing techniques and automatically creates a presence system where presence is captured by the faces of students who have archived their goal using the Viola-Jones algorithm and LBPH future work of this paper it will be oriented towards implementing deep learning in image processing and getting more accurate output for a larger number of students

In [23] this of the proposed system is limited to a user friendly institutional level application existing in a 3 layered hierarchical structure for having role based access that is Admin level, Level of Intelligence / Staff, and student level algorithm used in this Viola-Jones Algorithm and Key Component Analysis (PCA). In [22] this paper compares the whole algorithm in terms of space and time paradigm. It identifies Haar cascades as the most effective way to find faces and differences in facial recognition by doing it with open cv and doing it with matlab. The pros and cons of both approaches are discussed. and the disadvantages of various algorithms. and its effectiveness

The different types of the algorithm talked in this paper are as flow-

s.no	Algorithm comparisons		
	Technique	*Time consuming*	*Performance*
1	Haar Cascades	Initially, it was time consuming, but after the modified ver-sion it is not that time consuming.	It is very efficient in performance and is popularly used.
2	Cam Shift Algorith m	It is not very time- con-suming	It is very expensive to buy and is not that effective in per-formance
3	Finding via motion	It is very time-consuming	It is not so reliable as compared to any other algorithm

Fig 2.0 comparison of different algorithm[22]

In [24] this case the author has tried to use Real-Time Face detection and head tracking from high-definition video using Haar Classifier with Raspberry Pi BCM2835 CPU processor a combination of SoC and GPU based on its Architecture. Uses SimpleCV and OpenCV libraries for face detection and head tracking. Computer-assisted test results using computer vision Simple CV and OpenCV draft libraries and above computer software results obtained at 30 fps under 1080p resolutions that your high efficiency and accuracy and speed of face detection and head tracking stop space.

In [25] this paper, a board algorithm is being used that implements a semantic search engine is a cloud platform that uses semantic technology to extract relevant user data and describes the performance of semantic search and Big Data correlations and processing.

In [26]this paper the author had purposed a homomorphic encryption technique is offering characteristic of data integrity against chosen plain text on the data over cloud. Homomorphic cryptographic algorithms have the property of performing the operations on the encrypted data where it saves the time by not only decrypting the encrypted data each time and also the use of the Paillier algorithm which is a probabilistic algorithm has also been taken to obtained the objectives of obtaining data integrity and security in this implementation

In [27] this case the author was targeting system types where there are two methods of coding and coding face detection using the Haar Based Cascade separator and recognition using Principle Component analysis.. It is based on the concept like Deep- Learning Concepts and DLIB implementation algorithm and it is able to give 95% accuracy on the one single photo of the user. It is able to recognize the people even after any changes of hair-style. There are various different faces are stored in database for recognition

In[28] this paper, we propose to apply the composite features based on Viola-Jones algorithm to improve the above problems, and prove the feasibility of this method through experiments and a process by which the face image through a face detection based on Viola-Jones algorithm using composite features to ensure that the face recognition rate will not be affected and maintain a certain degree of detectable.

In [29] this paper the author had purpose a system to apply a YOLO network and it is applied to face detection. In this program the YOLO identification system is used to detect a person's face. The results obtained from the test results show that the YOLO-based facial recognition method had strength, durability and rapid visual acuity. However .At the same time, acquisition speed can meet real-time acquisition requirements

V. CONCLUSION

Through this paper we had successfully implemented a software system which will identify the people who are vaccinated or not our paper has demonstrates that it can help in replace with the manual ways of identifying people with a greater accuracy and efficient manner in this paper we have some of the Aws feature like Aws rekognition,and Aws Lambda and Aws rekognition and Aws EC2 instance

VI. FUTURE SCOPE

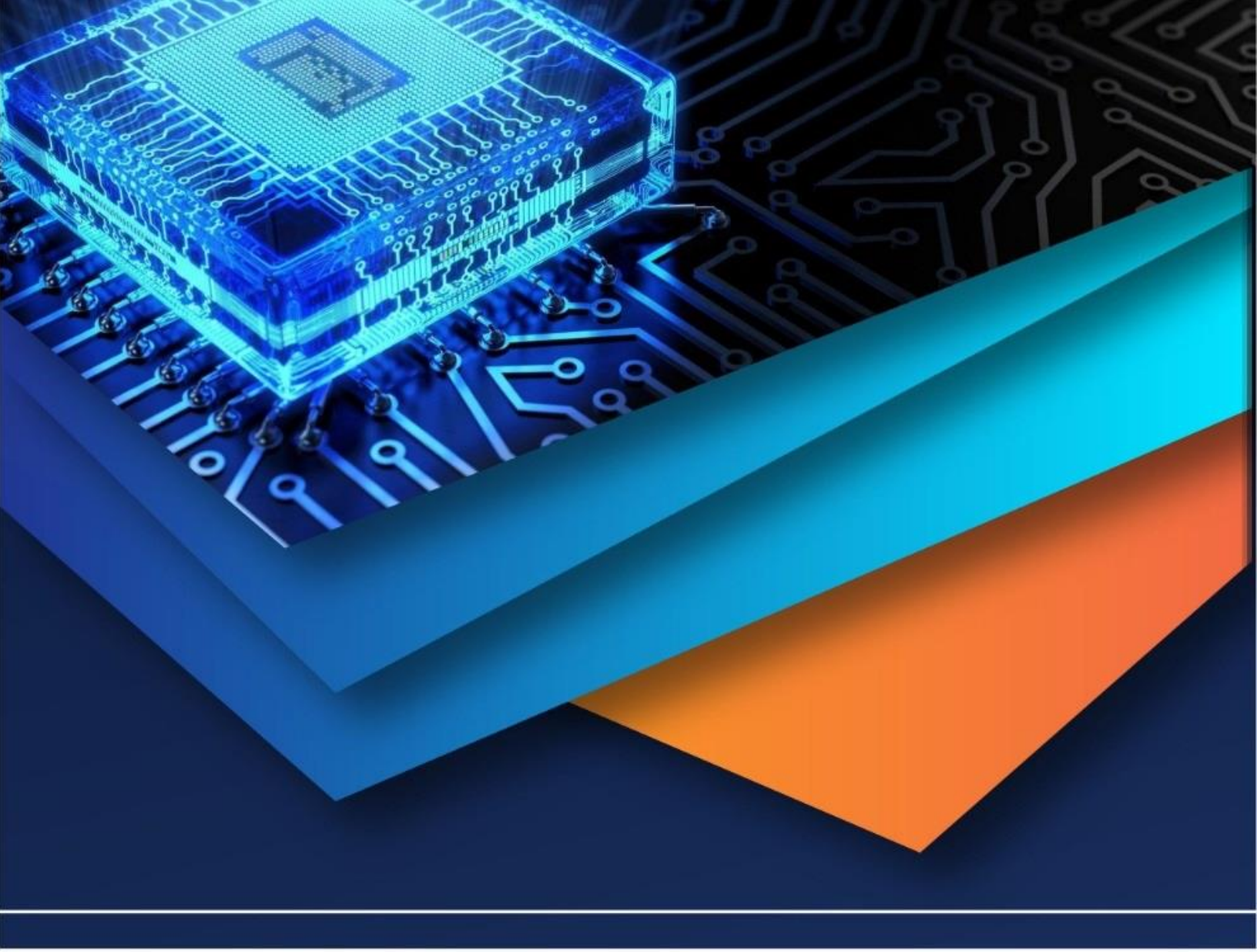
The Future scope of this project is that it can be upgrade with different types like PCA algorithm LDA hybrid algorithm. Our future work will be oriented towards implementing deep learning in image processing and getting more accurate output for a larger number of students We hope our research will made the universities more conscious about student security inside the classroom and automation in attendance. This system can be improved and enhanced in a way that it can also be used in multi-national companies for maintaining the surveillance of a much larger database, filled with huge number of entries of the employees working in a particular organization. This will be able to help in maintaining security.

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