ATTENDANCE USING FACE RECOGNITION

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ABSTRACT: NOWADAYS THE WISE ATTENDING MANAGEMENT SYSTEM VICTIMIZATION FACE DETECTION TECHNIQUES. DAILY ATTENDING MARKING COULD ALSO BE A TYPICAL AND VITAL ACTIVITY IN COLLEGES AND COLLEGES FOR CHECKING THE PERFORMANCE OF STUDENTS. MANUAL ATTENDING MAINTAINING IS TOUGH METHODOLOGY, SIGNIFICANTLY FOR LARGE CLUSTER OF STUDENTS. SOME MACHINE- DRIVEN SYSTEMS DEVELOPED TO X BEAT THESE DIFFICULTIES; HAVE DRAWBACKS LIKE WORTH, FAUX ATTENDING, ACCURACY, MEDDLESOMENESS. TO BEAT THESE DRAWBACKS, THERE IS NEED OF GOOD AND AUTOMATIC ATTENDING SYSTEM. WE'VE A BENT TO UNIT IMPLEMENTING ATTENDING SYSTEM VICTIMIZATION FACE RECOGNITION. SINCE FACE IS EXCLUSIVE IDENTITY OF PERSON, THE PROBLEM OF PRETEND ATTENDING AND PROXIES COULD ALSO BE RESOLVED. THE SYSTEM USES NATIVE BINARY PATTERN FACE RECOGNITION TECHNIQUE BECAUSE IT IS FAST, STRAIGHTFORWARD AND HAS LARGER SUCCESS RATE. ALSO, IT'S PRO-VISION TO HAVE AN EFFECT ON INTENSITY OF SUNSHINE DRAW BACK AND HEAD PRODUCE DRAW BACK THAT PRODUCES IT EFFECTIVE. THIS WISE SYSTEM COULD ALSO BE DEGREE EFFECTIVE BECAUSE OF MAINTAIN THE DEGREE WILL-LESS SQUAT RECOGNITION SYSTEM IS PLANNED SUPPORTED APPEARANCE-BASED CHOICES THAT CONCENTRATE ON THE SHORTENED SQUATTER IMAGE RATHER THAN NATIVE COUNTENANCE. THE REMAINDER STEP IN SQUATTER RECOGNITION SYSTEM IS SQUATTER DETECTION VIOLA-JONES SQUATTER DETECTION METHODOLOGY THAT CAPABLE OF METHOD PHOTOS TERRIBLY WHEREAS

ACHIEVING HIGHER DETECTION RATES IS UTILIZED. THE COMPLETE SQUATTER RECOGNITION METHODOLOGY COULD ALSO BE DIVIDED INTO A PAIR OF PARTS SQUATTER DETECTION AND SQUATTER IDENTIFICATION. FOR FACE DETECTION, VIOLA JONES FACE DETECTION METHODOLOGY HAS BEEN USED OUT OF THE MANY FACE DETECTION WAYS THAT. ONCE FACE DETECTION, FACE IS CROPPED FROM THE ACTUAL IMAGE TO URGE OBVIATE THE BACKGROUND. CHEMIST FACES AND SHEAR FACES WAYS THAT ARE USED FOR FACE IDENTIFICATION. AVERAGE PHOTOS OF SUBJECTS AREA UNIT USED AS COACHING JOB SET TO SPICE UP THE ACCURACY OF IDENTIFICATION.

Keywords: – Face Detection, Face Recognition, Algorithms, Viola Jones face detection.

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I. INTRODUCTION

1.1 OVERALL DISCRIPTION:

A. Face Detection: face detection is that the first and essential step for face recognition, and it is used to detect faces in images. it's a part of the thing detection and may use in many Ares like security, bio-metrics, enforcement, personal safety and entertainment etc. Face detection is taken under consideration a specific case of object-class detection. In object-class detection, the task is to hunt out the locations and sizes of all objects during a very image that belong to a given class.

B. Face Recognition: Face recognition may be a method of recognizing a person's face by using algorithms. It uses bio-metrics to map countenance from photograph of particular human and compares it with the database of known faces to seek out that specific face. Face recognition algorithms verify countenance by extracting landmarks, or from the themes faces. It always utilized in security systems and can be compared to completely different bio-science viz. fingerprint or iris.

1.1 PURPOSE

The purpose of developing attendance management system is to computerize the traditional way of taking attendance. Automated Attendance Management System performs the daily activities of attendance marking and analysis with reduced human intervention. The prevalent techniques and methodologies for detecting and recognizing face fail to overcome issues such as:

➢ Scaling,
➢ Pose,
➢ illumination,
➢ Variations,
➢ Rotation, and
➢ Occlusions.

The proposed system aims to overcome the pitfalls of the existing systems and provides features such as detection of faces, extraction of the features, detection of extracted features, and analysis of students' attendance. The system integrates techniques such as image contrasts, integral images, colour features and cascading classifier for feature detection. The system provides an increased accuracy due to use of a large number of features (Shape, Colour, LBP, wavelet, Auto-Correlation) of the face. Faces are recognized using Euclidean distance and k-nearest neighbour algorithms. Better accuracy is attained in results as the system takes into account the changes that occur in the face over the period of time and employs suitable learning algorithms. The system is tested for various use cases. We consider a specific area such as classroom attendance for the purpose of testing the accuracy of the system. The metric considered is the percentage of the recognized faces per total number of tested faces of the same person. The system is tested under varying lighting conditions, various facial expressions, presence of partial faces (in densely populated classrooms) and presence or absence of beard and spectacles. An increased accuracy (nearly 100%) is obtained in most of the cases considered.

1.2 Motivation and Scope:

The current recognition system has been designed for frontal views of face images. A neural network architecture (may be together with a feature based approach) can be implemented in which the orientation of the face is first determined, and then the most suitable recognition method is selected, Also the current recognition system acquires face images only from face files located on magnetic mediums. Camera and scanner support should be implemented for greater flexibility.

➢ Currently, the system has reached the accuracy level up to 80% for partial and dense images. It can further be improved to obtain higher accuracy levels.
➢ Further, 2 or more IP cameras can be employed and each image can be processed separately. The results of these can be merged to obtain better results and accuracy in denser classrooms.

2. LITERATURE SURVEY:

S. No	Author	Algorithm	Problem	Summary
1	Vishar Shehu	PCA	This recognit ion rate is 56%.	Using HAAR, classifier and computer vision implemen ted face recogniti on.
2	Kasar, M.Bhattac harya	Neural Netwo rk	Detecti on process ID is slow and comput ation is complex	Accurate, only flarge size of image was trained.

3	Suman Kumar, Kumar Rahul	Fisher Face	Bigger database is required because Image of different expression of individuals have to be trained in same class	Images of individuals with different illuminations , facial recoginisation on if more sample are trained .
4	Sayan Navaz	PCA	Low accuracy with big size of images to be train with PCA.	Using PCA to train and reduce dimensionlity and ANN to classify input data and find the pattern.

3. PROPOSED MODEL:

System Architecture: In our procedure comprised camera is used for catching the pictures of the lecture hall and then directing pictures to picture enlargement segment. Splitting image increases identification and appreciation of the modules after the image improvement and being present noticeably at particular time to the recorder system. The experimental setup depicted below. Patterns of face pictures of a single student are stored in the database at the time of registration. So the faces are then recognized from the image, then the procedure matches with the database. The attendance marked on server if any of the face identified from the database and it can be accessed by everyone for numerous reasons. This also habits the procedure that can be used for attendance. The system is also attached with the time table unit that robotically gets class at what time and what subject. The system robotically becomes presence deprived of opinions the learners and the teachers. So teachers after coming to the class when taking attendance they just press the attendance button to start the attendance procedure. This method is highly protected method here no one can give the attendance of the other and also saves a lot of time.
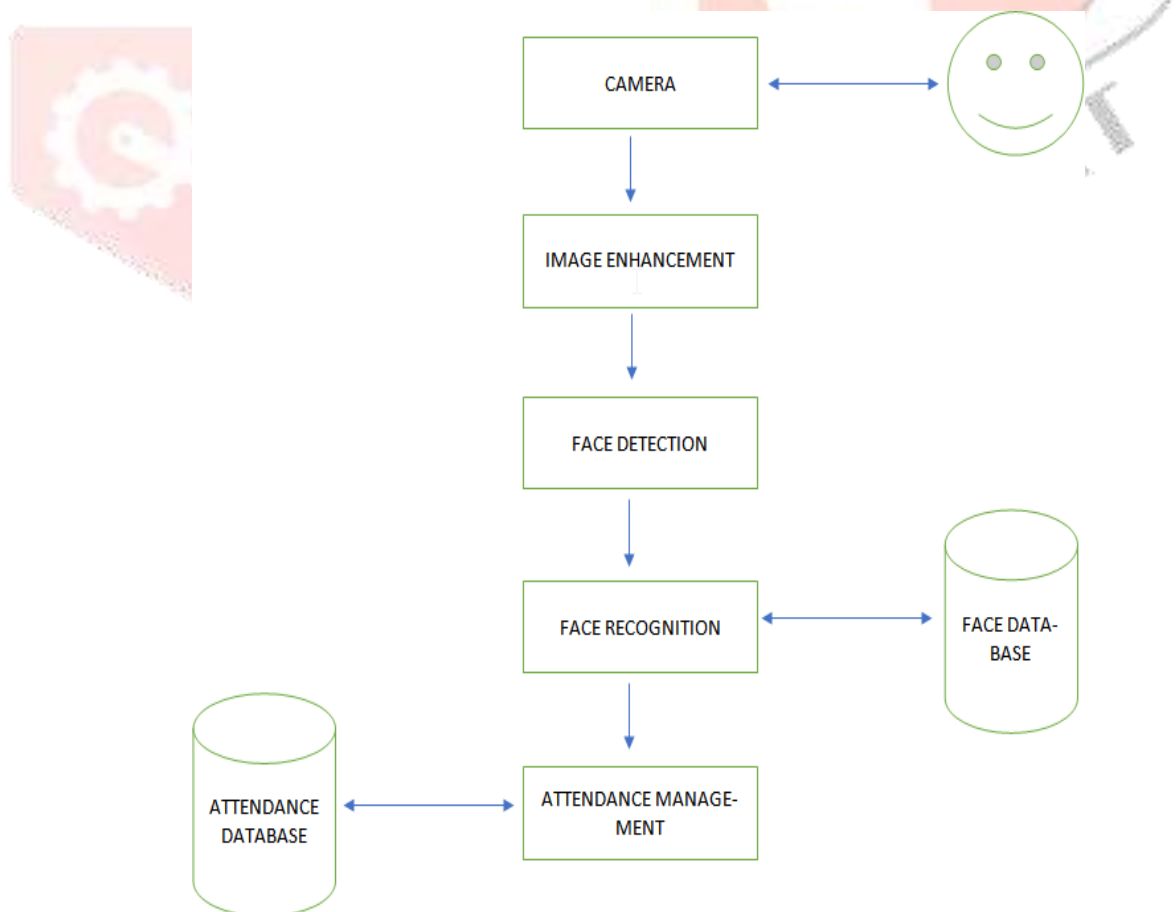
4. ALGORITHMS:

4.1. Eigen face technique: This process is used for completing reduction in the dimensionality. This algorithm is frequently used for the recognition of faces. This detection and face recognition uses the principal component study. Eigen face acts as a core component for dividing of face into separate feature vector. Covariance matrix used for finding the data from the article vector. The faces are differentiated by using the highest Eigen values. The image having a face is then measured as grouping of Eigen expressions. The difference among faces is then measured using that of the Eigen vectors. Face space is defined as the top M Eigen faces that match with the outline of M dimensional space. Association and training data has a much relation between them, by the authors to expertly symbolize photographs of the faces. By recreating a image by using collecting small loads for every image and progress image as good face snapshot. Eigen picture helps to obtain the weights of each face. The Eigen face method is widely used because of its implementation and algorithm that makes the face recognition easy. This is good for storage and time of handling is also good. Eigen face has correctness and it depends on many things. The image can be minimized to the dimension size in short period of time can be done by PCA. This Eigen face is not suitable for location and lightening conditions.

4.2 Neural networks patterns: The main goal of neural networks is that it has the capability to perform complex face patterns. The neural networks are employed in many layers, different number nodes, and also different learning for achieving good performance. The applications if these methods are driving of robot autonomously, recognition of objects, and problem recognition. Principal component analysis is recognition. If there are 40 individuals and are having 400 images then the correctness of the face identification is attained by 96.2% by the authors. The time taken for arrangement is 0.5 second and time taken for training is 4 hours and sends slight invariance to rotation translation and scale.in supervised pattern matching because of its ability and plainness we choose MLP algorithm that is multi-layer perceptron. For pattern classification neural networks are used. For extracting of feature vectors and also for finding specific feature points Gabor wavelet method is used.

4.3 Fisher face approach: Fisher faces the most widely and effectively used methods for recognition of faces. This method depends on the method of appearance. Linear or fisher discriminant analysis for face recognition established in the year 1930 by Fisher. It is one of successful methods that are used for face recognition procedure, Belhumer etal. authenticated this method as LDA. This LDA method used for the finding of set of centre images that maximizes the ratio of the outside the class scatter and within the class scatter. This method has some drawbacks that the session the distribute medium will be perpetually alone ever since pixels of number image more than that pictures that are maximized for detection error rate so that if any alteration is posed and brightness if there changes that is inside the pictures that are same. Many algorithms have been proposed to overcome the above drawbacks.

5. CONCLUSION:

In order to take over the existing system, this method has been projected. It replaces the manual system with an automatic system that is quick, efficient, price and time saving as replaces the stationary material and therefore the paper work. Hence this method is predicted to give desired results and in future can be enforced for logout. Also the efficiency could be improved by integration alternative techniques with it in close to future.

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