Automated Surveillance System

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***Abstract*- The real-time CCTV body detection has been made possible by using the method of Viola jones, blob Analysis work. The software first taking CCTV Video of all the authorized persons and stores the information into database. Proposed work deals with automated system to detect and classify the body using Sparse Finger classification (SFC) algorithm. The methodology comprised of three phases, first take video and convert it into frames. Next apply blob analysis for the purpose of Body Detection from CCTV Video, third apply SFC for the purpose of classification. The most useful and unique features of the CCTV video are extracted in the feature extraction phase using LBP. In the classification the CCTV Video is compared with the images from the database. In our research work, we empirically evaluate body recognition which considers both shape and texture information to represent body capture based on Sparse Finger classification (SFC) for person independent body recognition. The body area is first divided into small regions from which SFC, histograms are extracted and concatenated into a single feature vector. This feature vector forms an efficient representation of the body and is used to measure similarities between CCTV Video. In third phase and blob Analysis has been created and trained according to the features extracted from the CCTV Video. Trained classifier classifies the types of according to their features.**

***Index Terms*- Face Recognition, Principal Component Analysis, Voice Conversion, ANN etc.**

1. INTRODUCTION

Checking the CCTV Video based body are recognised with comparable performance are based on the similarity between features extracted from regions of the gallery images and those from the query image .Recently, one novel approach proposed a new representation of the body image that is a sequence of forehead, eyes, nose, mouth and chin. body recognition the Sparse Fingerprint Classification Algorithm. SFCA has demonstrated high accuracy under a large number of different conditions, such as variations in ambient light, pose, occlusion, size of the face and distance from the camera. SFCA's simplicity and effectiveness are due to its use of a binary sparse matrix. SFCA does not require sparse reconstruction and is based only on the sparse coefficient vector, which gives it an advantage over existing methods.

II. LITERATURE SURVEY

1.Paper name: Dynamic Image-to- Class Warping for Occluded Face Recognition
Author: X. Wei, C.-T. Li, Z. Lei, D. Yi, and S. Li,
Face recognition (FR) systems in real-world applications need to deal with a wide range of interferences, such as occlusions and disguises in face images. Compared with other forms of interferences such as non-uniform illumination and pose changes, face with occlusions has not attracted enough attention yet. A novel approach, coined dynamic image-to-class warping (DICW), is proposed in this work to deal with this challenge in FR. The face consists of the forehead, eyes, nose, mouth, and chin in a natural order and this order does not change despite occlusions.

2.paper name: An Introduction to the Good, the Bad, & the Ugly Face Recognition Challenge Problem
Author: P. J. Phillips, J. R. Beveridge, B. A. Draper, G. Givens
Most educational institutions' administrators are concerned about student irregular attendance. The Good, the Bad, & the Ugly Face Challenge Problem was created to encourage the development of algorithms that are robust to recognition across changes that occur in still frontal faces. The Good, the Bad, & the Ugly consists of three partitions. The Good partition contains pairs of images that are considered easy to recognize. On the Good partition,

the base verification rate (VR) is 0.98 at a false accept rate (FAR) of 0.001. The Bad partition contains pairs of images of average difficulty to recognize

3.paper name: DeepFace: Closing the Gap to Human-Level Performance in Face Verification
Author: Y. Taigman, M. Yang, M. Ranzato, and L. Wolf
In modern face recognition, the conventional pipeline consists of four stages: detect ⇒ align ⇒ represent ⇒ classify. We revisit both the alignment step and the representation step by employing explicit 3D face modeling in order to apply a piecewise affine transformation, and derive a face representation from a nine-layer deep neural network. This deep network involves more than 120 million parameters using several locally connected layers without weight sharing, rather than the standard convolutional layers.

4.paper name: Robust face recognition via sparse representation
Author: J. Wright, A. Y. Yang, A. Ganesh, S. S. Sastry, and Y. Ma
Our use of sparsity for classification differs significantly from the various parsimony principles discussed above. Instead of using sparsity to identify a relevant model or relevant features that can later be used for classifying all test samples, it uses the sparse representation of each individual test sample directly for classification, adaptively selecting the training samples that give the most compact representation.

5.paper name: Toward a practical face recognition system: Robust alignment and illumination by sparse representation
Author: A. Wagner, J. Wright, A. Ganesh, Z. Zhou, H. Mobahi, and Y. Ma
Many classic and contemporary face recognition algorithms work well on public data sets, but degrade sharply when they are used in a real recognition system. This is mostly due to the difficulty of simultaneously handling variations in illumination, image misalignment, and occlusion in the test image. We consider a scenario where the training images are well controlled and test images are only loosely controlled. We propose a conceptually simple face recognition system that achieves a high degree of robustness and stability to illumination variation, image misalignment, and partial occlusion. The system uses tools from sparse representation to align a test face image to a set of frontal training images.

III. EXISTING SYSTEMS

Traditional way of CCTV Video involves a typical situation of user anywhere and tracks the object and detects the object. After detection we will recognized object is normal or criminal.
Disadvantages of Proposed System

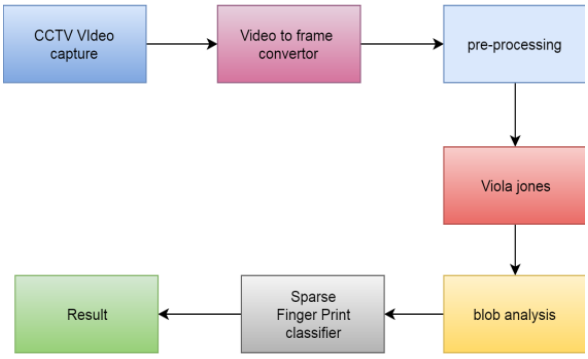
- It is cumbersome to maintain a huge set of records.
- It is time Consuming
- Error-prone
- Its leads to wastage of Resources.

IV. PROPOSED SYSTEM

This paper is presenting a proposed work of an automated CCTV video Capture system using Mat lab and . This work is experimented on user face we have to used classification methods, PNN algorithms, etc. But improvements are expected to increase its efficiency of classification. This system automatically detects the user name and detect the by recognizing their. This system is developed by capturing real time human faces. The detected and matched against the reference in the dataset and detect the user in CCTV Video camera.
Advantages of Proposed System

- We perform a detailed security analysis and performance evaluation of the proposed data
- Required less time
- Increase Efficiency
- improve the accuracy.

V. SYSTEM ARCHITECTURE



The system can be extended to respond to the presence of new camera. Also, means to capture body without the intervention of system i.e. automatically captures the video at the beginning of every hour can be implemented. This work is experimented on user face we have to used classification methods, PNN algorithms, etc. But improvements are expected to increase its efficiency of classification. This system automatically detects the user name and detect the by recognizing their. This system is developed by capturing real time human faces. The detected and matched against the reference in the dataset and detect the user in CCTV Video camera.

VI.APPLICATIONS

Detect frauds at crowded areas such as bus stands, theatres, railway stations wherein by face recognition techniques,

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