

# DATA ENCRYPTION IN FACE RECOGNITION APPLICATION FOR CRIME INVESTIGATION

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## ABSTRACT:

In general, the field of face recognition has lots of research that have put interest in order to detect the face and to identify it and also to track it. Many researchers have concentrated on the face identification and detection problem by using various approaches. The proposed approach is further very useful and helpful in real time application. Thus the Face Detection, Identification which is proposed here is used to detect the faces in videos in the real time application by using the FDIT (Face Detection Identification Technique) algorithm. Thus the proposed mechanism is very help full in identifying individual persons who are been. Involved In the action of robbery, murder cases and terror activities. Although in face recognition the algorithm used is of histogram equalization combined with Back propagation neural network in which we recognize an unknown test image by comparing it with the known training set images that are been stored in the database. Also the proposed approach uses skin color extraction as a parameter for face detection. A multi linear training and rectangular face feature extraction are done for training, identifying and detecting. Thus the proposed technique is PCA + FDIT technique configuration only improved recognition for subjects in images are included in the training data. It is very useful in identify a single person from a group of faces. Thus the proposed technique is well suited for all kinds faces frame work for face detection and identification. The face detection and identification modules share the same hierarchical architecture. They both consist of two layers of classifiers, a layer with a set of component classifiers and a layer with a single combination classifier. Also we have taken a real life example and simulated the algorithms in IDL Tool successfully.

**Keywords:** PCA, PRDIT, FDIT, histogram equalization, rectangular features.

## INTRODUCTION:

The face is our primary focus of attention in social life playing an important role in conveying identity and emotions. Detection and recognition of face is an important research in the area of computer vision [1]. The process of face detecting is a challenge and toughest process because of different facial expression, races, backgrounds, illumination, overlapping, low brightness make the face detection process as more complicated one. Computational models of face recognition are interesting because they can contribute not only to theoretical knowledge but also to practical applications. Computers that detect and recognize faces could be applied to a wide variety of tasks including criminal identification, security system, image and film processing, identity verification, tagging purposes and human-computer interaction. Unfortunately, developing a computational model of face detection and recognition is quite difficult because faces are complex, multidimensional and meaningful visual stimuli [2]. Thus the Face detections are used in many places now a days especially on websites hosting like plcassa and face book. The automatically tagging feature adds a new dimension in order to share pictures among the people who are in the picture and also gives idea to other people about who the person in the image. Here we have studied and implemented a pretty simple but very effective face detection algorithm which takes human skin color into account for detecting and tracking the face[3][4]. Also here we propose a new approach which is based on the multi linear training and rectangular face feature extraction. Detecting, training, tracking and identification are the major steps of the proposed technique. The main aim, which we believe we have reached, was

to develop a method of face recognition that is of fast, robust, reasonably simple and accurate with a relatively simple and easy to understand algorithms and techniques [4].

## 2. PERSPECTIVE OF OUR WORK:

The proposed approach is simple, fast and accurate which is been applied together as a single algorithm to provide better results under complex circumstances like face position, luminance variation etc. Each of these algorithms are been discussed one by one below. Thus the proposed approach handle changes on the face image like lighting, complexity in the background, multiple faces in the image. Thus the proposed approach makes an improvement in the detection results rather than the other detectors. The more challenging function in the detectors is to handle the poses. Different type of pose makes conflict in detecting a particular personality and our proposed approaches overcome these drawbacks [1]. Next the various method of tracking approach gets confused in the beginning stage and we use a tracker algorithm for the detection and it avoids the above mentioned problem. The information for the detecting process incorporates with the parameter and reproduces the information itself. Hence these algorithms always find faces in the frames even though the frame based detectors gets fails. Thus the knowledge of training can understand new faces that are entered in the training and it is always ready to integrate in the updating process [7].

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