

# FACE IDENTIFICATION PROJECT FOR CRIME INSPECTION

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**Abstract :** According to the current scenario Crime rate increasing day by day and also the number of criminals increasing. That leads towards a great security issues. In such situations, crime preventions and criminal identification becomes the primary issues. This paper provides the results of major study to determine the role and impact of a person investigation during crime scene. The aim of this paper is to identify of a person in a crime scene by witness descriptions using image processing techniques. Biometrics based personal identification provides a promising solution for this kind of problems. Biometrics features include face, speech, handwriting and finger prints etc. The advantage of face identification of being a passive, non-invasive system for personal identification. Face identification success depends on the solution of two problems: Representation and matching. The representation of face images will be used by both the algebraic and geometric features.

**IndexTerms - Biometric features, Crime Scene, Facial Identification, FRT, Image processing techniques.**

## I. INTRODUCTION

The work involved in this project is:

1. Obtaining the human face images from different video sources such as CCD cameras, Cam coders, Digital cameras, Scanners, stored images etc.
2. These images are then digitized and stored in a memory for further processing.
3. Then each video frame is segmented into different parts. For example, the given video frame containing a human face is sliced into three parts of all the images are then stored in a separate databank. Different images of similar parts are stored in their respective files such as forehead, eyes and mouth, which are used for reconstructing the images in order to get an identifiable image based on various descriptions.

Face recognition, both by humans and machines, is developing as an active research area. In order to better design machine based face recognition, it is necessary to understand how humans perceive faces. The primary task at hand, given still or video images, requires the identification of one or more persons using a database of stored face images. To do this the face must be segmented and extracted from the scene, where upon it can be identified and matched.

## II. HUMAN AND MACHINE RECOGNITION OF FACES

Faces recognition by Machine and video images is an active research area spanning several disciplines such as pattern recognition, image processing, computer vision and neural networks. In addition, face recognition technology (FRT) has numerous commercial and law enforcement applications. Ranging of such applications from static matching of controlled format photographs such as passports, credit cards, photo ID's, driver's licenses. Although humans seem to recognize faces in cluttered scenes with relative ease, machine recognition is a much more daunting task. The general problem can be stated as follows: Given still or video images of a scene, identify one or more persons in the scene using a stored database of faces. Available collateral information such as race, age and gender may be used in narrowing the search. The solution of the problem involves segmentation of faces from cluttered scenes, extraction of features from the face region, identification, and matching. The generic face recognition task thus posed is a central issue in problems such as electronic line up and browsing through a database of faces.

## III. PREVIOUS WORK

Faces recognition by Machine and video images is an active research area spanning several disciplines such as pattern recognition, image processing, computer vision and neural networks. In addition, face recognition technology (FRT) has numerous commercial and law enforcement applications. Ranging of such applications from static matching of controlled format photographs such as passports, credit cards, photo ID's, driver's licenses. Although humans seem to recognize faces in cluttered scenes with relative ease, machine recognition is a much more daunting task. The general problem can be stated as follows: Given still or video images of a scene, identify one or more persons in the scene using a stored database of faces. Available collateral information such as race, age and gender may be used in narrowing the search. The solution of the problem involves segmentation of faces from cluttered scenes, extraction of features from the face region, identification, and matching. The generic face recognition task thus posed is a central issue in problems such as electronic line up and browsing through a database of faces.

## IV. APPLICATION OF FRT

Current applications of Face Recognition Technology (FRT) include both commercial and law enforcement agencies .For the case of law enforcement agencies the emphasis has been on face identification, witness recall, storage and retrieval of mug shot user interactive systems.

**a) Commercial Applications**

Commercial applications of FRT may soon become more important economically than law enforcement applications. This has the potential for drastically reducing the cost of face recognition in law enforcement. Advantages of facial identification over alternative methods, such as fingerprint identification, are based primarily on user's convenience and cost. Facial recognition can be corrected in uncertain cases by humans without extensive training.

**b) Law enforcement**

The basic approach to the mug shots problem is for the system to compare features from the target with those stored in the database. The target may be a mug shot or from another photographic source and may need to be rotated before the features can be extracted and compared to the mug file images.

**V . MODULE DESCRIPTION**

In the first phase, maximum numbers of face images are obtained either, as live images from CCD Camera, Web camera, Camcorder etc., or as stored images from scanners and as external file inputs.

By activating the setup command button an image is displayed on the user control by retrieving all initial records of the respective databanks (viz., forehead, eyes and mouth) by using the previous and next keys it is possible to align all the slices in order to generate a human face.

By using the "construct" command button, the full image will be reconstructed using all the three slices i.e., combining all the three slices into a full image in order to generate an identifiable human face. Different pre-processing methods can be applied on the generated human face for analysis.

**Module 1: Get photo**

This module will just get the photo that is to be processed. The functions that are to be performed on this photo are display image, display, slice, move slice, free slice etc.

**MODULE 2: SETUP PHOTO**

This module will perform the various functions like getting the image, updating the image, moving slices, getting the pixel and setting the pixel

**MODULE 3: ABOUT PERSON**

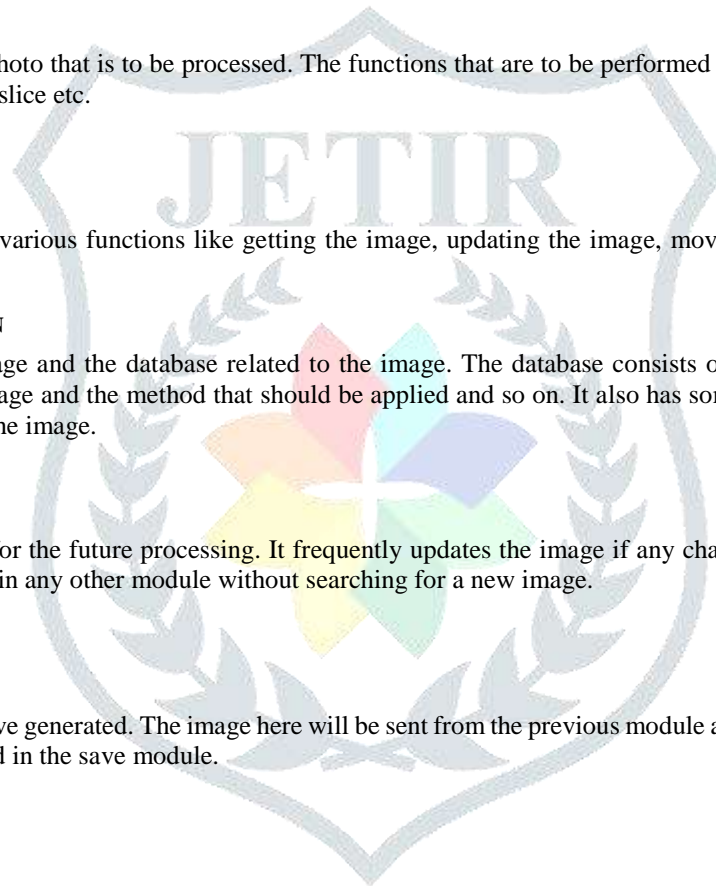
This has the details of the image and the database related to the image. The database consists of the details of the image, their position and the type of the image and the method that should be applied and so on. It also has some predefined functions that are performed on the database of the image.

**MODULE 4: SAVE IMAGE**

This module saves the image for the future processing. It frequently updates the image if any changes were made. This helps the system to use the saved image in any other module without searching for a new image.

**MODULE 5: PRINT IMAGE**

This will print the image we have generated. The image here will be sent from the previous module and will be available for printing. The image here will be updated in the save module.



## VI.WORKING MODEL WITH JUSTIFICATION

The model starts with a requirements gathering phase. A quick design is carried out and the prototype model is built using several short cuts which might involve using inefficient, inaccurate or dummy functions.

The build prototype is submitted to the customer for his evaluation. Based on the user feedback, the requirements are refined. Until the user approves the prototype this same cycle continues. The actual system is then developed using the classical waterfall approach. However, in this development effort, the requirements analysis and specification phase become redundant since the working prototype along with the user feedback serves as an animated requirements specification.

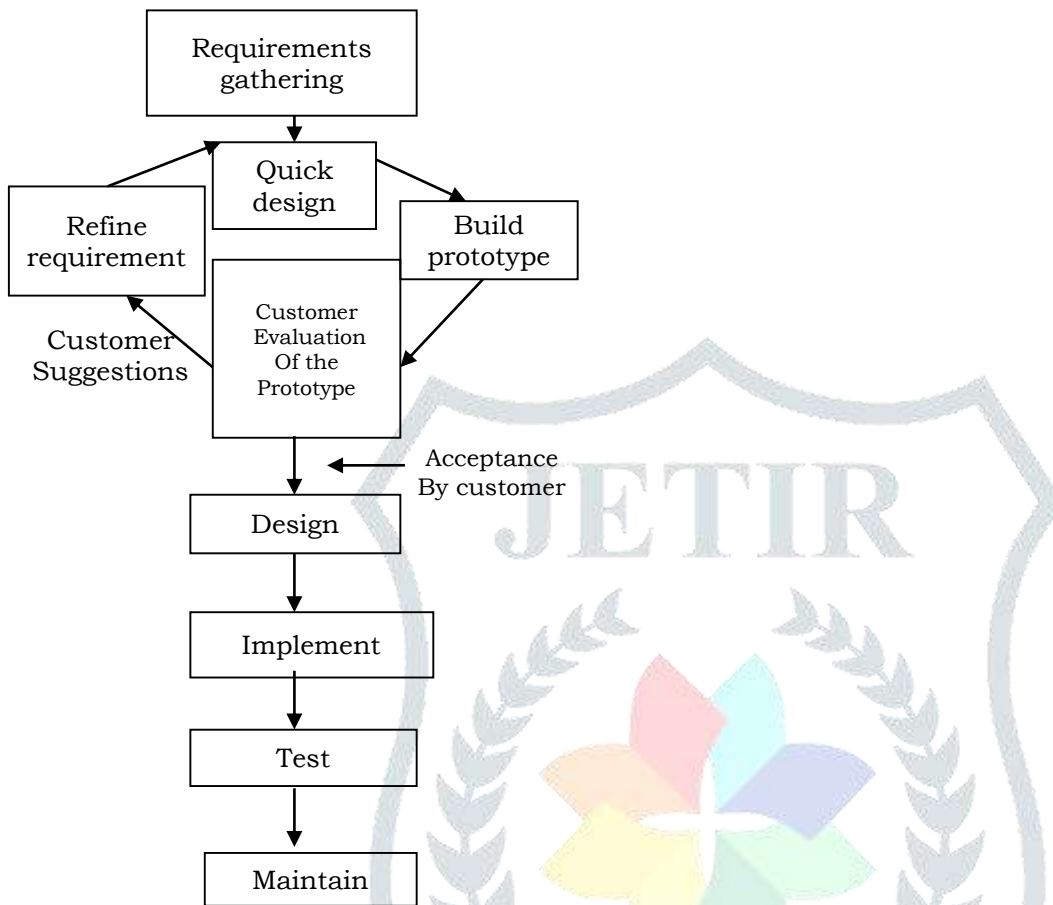


Fig.- Access Model with Justification

## VII.CONCLUSION

The project titled FACE RECOGNITION USING IMAGE CROPPING is developed to design a system that supports to find the criminals in less time. A user with valid user\_id and password are only allowed to access the developed system. In this project we store the details of the criminals in database and retrieve them when required.

Previously it was difficult to find the criminal manually through files. In the proposed system we can maintain the details of criminals of all regions in a database so that time required for finding the criminals is reduced.

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