ATM Security Using Image Processing in Machine Learning

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Abstract - **The real-time face detection and recognition has been made possible by using the method of Viola jones, Analysis work. The software first taking images of all persons and stores the information into database. Proposed work deals with automated system to detect person. The methodology comprised of three phases, first face Detection from image, second get all detail of face for the purpose of feature extraction. The most useful and unique features of the camera image are extracted in the feature extraction phase. Find out all facial details are visible. This feature vector forms an efficient representation of the face. In third phase and grab our feature extraction has been created to find the person how osculated face.**

Keywords: Detection, Recognition, database.

I. INTRODUCTION

The rise of technology bring into force loads of types of tools that aspire at more customer pleasure. ATM is a machine which made money transactions effortless for customers. But it has both advantages and disadvantages. Current ATMs make use of naught more than an access card and PIN for uniqueness confirmation. This has ATM Using Face Recognition System demonstrate the way to a lot of fake attempt and mistreatment through card theft, PIN theft, stealing and hacking of customers account details and other part of security. Checking the Camera module based faces are recognized with comparable performance is based on the similarity between features extracted from regions of the images and those from the query image.

Face recognition system is an application that mechanically identifies a person from a digital image source. One of the behaviors to do this method is by matching chosen facial features from a facial database and the image.

Motivation is to provide the latest review of existing literature on facial recognition and to bring to the limelight, the studies of computer vision in recognition of human faces. A facial recognition system is a computer application for automatically identifying or verifying a person from a digital image. Efficient and accurate object detection has been an important topic in the advancement of computer vision systems. With the advent of deep learning techniques, the accuracy for object detection has increased drastically. The project aims to incorporate for face detection with the goal of achieving high accuracy with a real-time performance.

II. METHODOLOGY

User Interface Skin color ratio finding Skin detection is the process of finding skin-colored pixels and regions in an image or a video. This process is typically used as a preprocessing step to find regions that potentially have human faces and limbs in images. Skin image recognition is used in a wide range of image processing applications like face recognition, skin disease detection, gesture tracking and human-computer interaction.

The primary key for skin recognition from an image is the skin color. But color cannot be the only deciding factor due to the variation in skin tone according to different races. Other factors such as the light conditions also affect the results. Therefore, the skin tone is often combined with other cues like texture and edge features. This is achieved by breaking down the image into individual pixels and classifying them into skin colored and non-skin colored. One simple method is to check if each skin pixel falls into a defined color range or values in some coordinates of a color space. There are many skin color spaces like RGB, HSV, YCbCr, YIQ, YUV, etc. that are used for skin color segmentation. We have proposed a new threshold based on the combination of RGB, HSV and YCbCr values.
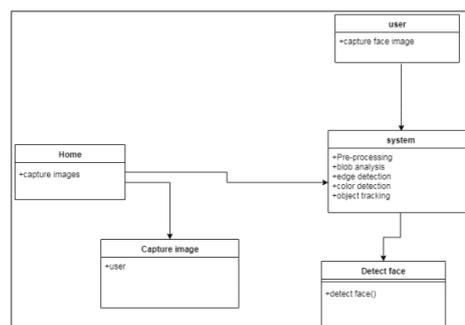

Figure 1: Block Diagram

The following factors should be considered for determining the threshold range:

1. Effect of illumination depending on the surroundings.
2. Individual characteristics such as age, sex and body parts.
3. Varying skin tone with respect to different races.
4. Other factors such as background colors, shadows and motion blur.

The skin detection is influenced by the parameters like Brightness, Contrast, Transparency, Illumination, and Saturation. The detection is normally optimized by taking into consideration combinations of the mentioned parameters in their ideal ranges. Skin detection process has two phases: a training phase and a detection phase.

Training a skin detector involves three basic steps:

1. Collecting a database of skin patches from different images. Such a database typically contains skin-colored patches from a variety of people under different illumination conditions.
2. Choosing a suitable color space.
3. Learning the parameters of a skin classifier.

Given a trained skin detector, identifying skin pixels in a given image or video frame involves:

1. Converting the image into the same color space that was used in the training phase.
2. Classifying each pixel using the skin classifier to either a skin or non skin.
3. Typically post processing is needed using morphology to impose spatial homogeneity on the detected regions.
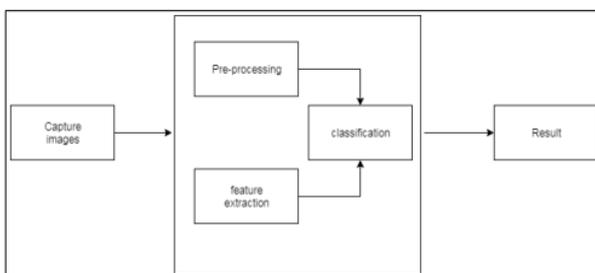

Figure 2: Data Flow Diagram

III. EXPECTED RESULT

The performance of the functions and every module must be well. The overall performance of the software will enable the users to work efficiently. Performance of encryption of data should be fast. Performance of the providing virtual environment should be fast.

IV. CONCLUSION

This project focuses on developing an automated system for ATM. It saves time and effort, especially if it is huge number of person. It can be extended to video surveillance to detect person at crowded areas such as bus stands, theatres, railway stations where in by face recognition techniques, the identity of the culprits can be found. It is useful to detect criminal activates. Already some measures are available for ATM security but we have introduced some features like identifying the valid or invalid user by face recognition, blocking the card for invalid user and the secondary password in case of emergency situations. More and more security is needed for the users. Thus we conclude that ATM security have been enhanced with new features and its implementation.

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