ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

*(A High Impact Factor, Monthly, Peer Reviewed Journal)*

*Website: www.ijareeie.com*

**Vol. 8, Issue 3, March 2019**

# Third Generation ATM Machine Using Advanced Image Processing

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**ABSTRACT:** Automated teller machines (ATMs) are well known devices typically used by individuals to carry out a variety of personal and business financial transactions and/or banking functions. ATMs have become very popular with the general public for their availability and general user friendliness. ATMs are now found in many locations having a regular or high volume of consumer traffic. For example, ATMs are typically found in restaurants, supermarkets, Convenience stores, malls, schools, gas stations, hotels, work locations, banking centers,airports, entertainment establishments, transportation facilities and a myriad of other locations. ATMs are typically available to consumers on a continuous basis such that consumers have the ability to carry out their ATM financial transactions and/or banking functions at any time of the day and on any day of the week. This project is based on the facial recognition and also the multilevel security system to work on this entire concept. Here, we have some PHP support to analyse the person authorized identification.

## I. INTRODUCTION

The identification of objects in an image would probably start with image processing techniques such as noise removal, followed by (low-level) feature extraction tolocate lines, regions and possibly areas with certain textures.

The clever bit is to interpret collections of these shapes as single objects, e.g. cars on a road, boxes on a conveyor belt or cancerous cells on a microscope slide. One reason this is an AI problem is that an object can appear very different when viewed from different angles or under different lighting. Another problem is deciding what features belong to what object and which are background or shadows etc. The human visual system performs these tasks mostly unconsciously but a computer requires skilful programming and lots of processing power to approach human performance. Manipulating data in the form of an image through several possible techniques. An image is usually interpreted as a two-dimensional array of brightness values, and is most familiarly represented by such patterns as those of a photographic print, slide, television screen, or movie screen. An image can be processed optically or digitally with a computer.

To digitally process an image, it is first necessary to reduce the image to a series of numbers that can be manipulated by the computer. Each number representing the brightness value of the image at a particular location is called a picture element, or pixel. A typical digitized image may have 512 × 512 or roughly 250,000 pixels, although much larger images are becoming common. Once the image has been digitized, there are three basic operations that can be performed on it in the computer. For a point operation, a pixel value in the output image depends on a single pixel value in the input image. For local operations, several neighbouring pixels in the input image determine the value of an output image pixel. In a global operation, all of the input image pixels contribute to an output image pixel value.

These operations, taken singly or in combination, are the means by which the image is enhanced, restored, or compressed. An image is enhanced when it is modified so that the information it contains is more clearly evident, but enhancement can also include making the image more visually appealing.

In recent studies it is shown that the generic nature of line segments and ellipses affords them an innate ability to represent complex shapes and structures. While individually less distinctive, by combining a number of these primitives, we empower a combination to be sufficiently discriminative. Here, each combination is a two-layer abstraction of primitives: pairs of primitives (termed shape tokens) at the first layer, and a learned number of shape tokens at the second layer. We do not constrain a combination to have a fixed number of shape-tokens, but allow it to

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automatically and flexibly adapt to an object class. This number influences a combination's ability to represent shapes, where simple shapes favour fewer shape-tokens than complex ones. Consequently, discriminative combinations of varying complexity can be exploited to represent an object class. We learn this combination by exploiting distinguishing shape, geometric, and structural constraints of an object class. Shape constraints describe the visual aspect of shape tokens, while geometric constraints describe its spatial layout (configurations). Structural constraints enforce possible poses/structures of an object by the relationships (e.g., XOR relationship) between shape-tokens.

## II. PROJECT DESCRIPTION

**EXISTING ATM SYSTEM:**

- Existing ATMs are convenient and easy to use for most consumers.
- Existing ATMs typically provide instructions on an ATM display screen that are read by a user to provide for interactive operation of the ATM.
- Having read the display screen instructions, a user is able to use and operate the ATM via data and information entered on a keypad.

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**PROPOSED SYSTEM:**

- In this proposed system we have created the new generation ATM machine which can be operator without the ATM card
- In server we can collect the related information of the Image (i.e) the users account details, their photo etc. is terminated.
- So by using this system need of ATM card is completely eliminated we can operate the ATM machine.
- In the existing system all the transactions are done through keyboard only.

**Face Detection:**

In this object detection and tracking example, we will develop a simple face tracking system by dividing the tracking problem into three separate problems:

- **1.Detect a face to track** - Create a cascade object detector to detect the location of a face in a video frame. The cascade object detector uses the Viola-Jones detection algorithm and a trained classification model for detection.

**BLOCK DIAGRAM**.:

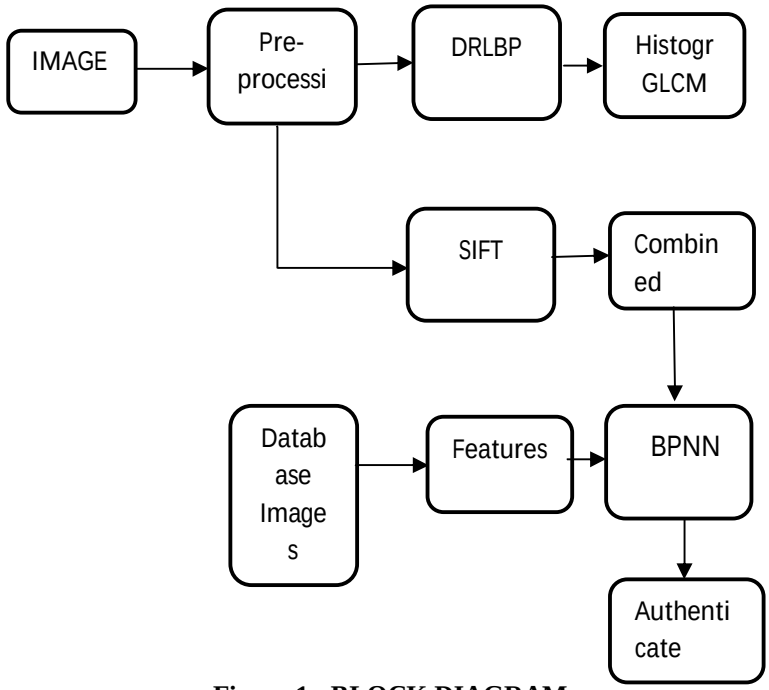


**Figure 1: BLOCK DIAGRAM**

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- **2.Identify facial features to track** - Once the face is located in the video, the next step is to identify a feature that will help you track the face. For example, you can use the shape, texture, or color.
- **3.Track the face** - The histogram based tracker uses the *CAMShift*algorithm, which provides the capability to track an object using a histogram of pixel values

**Software Tools**:

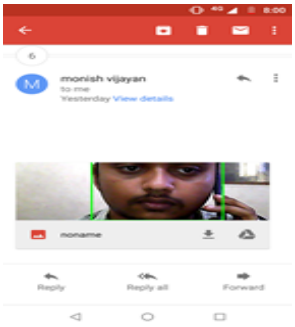
- Python
- Open CV
- Numpy

**OPEN CV**

- OpenCV is an Image Processing library created by Intel and maintained by Willow Garage.
- Available for C, C++, and Python
- Newest update is version 2.2
- Open Source and free
- Easy to use and install

## III. RESULT

When the face of the owner doesn't match with the previously mentioned person then the photo is printed and mailed to the owner of the account.




## IV. CONCLUSION

We have proposed a novel approach called Dynamic Feature Matching (DFM) to address partial face recognition. Fully Convolutional Network (FCN) is used in generating spatial features with sharing computation regardless of the arbitrary size input. Dynamic feature dictionary that corresponds to the size of the probe is obtained. DFM could be easily extended to solve other visual recognition tasks, which is justified by higher accuracy and efficiency in partial person re-id experiements on Partial RE-ID and iLIDS databases.

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