

Enhanced Security in ATM by IRIS and Face Recognition Authentication

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Abstract – Banking is very easier now a day, but sometimes the chances of cyber crimes are on rampant. There are number of frauds has occurred in banking transaction. Number of advantages of ATM system as well as number of frauds has become widespread. The growth in the online transaction has resulted in a greater demand for fast and accurate user recognition and authentication.lot of people have been depending on and trusting the Automatic teller Machine(ATM) to do banking needs easily. In this paper we propose the face recognition system for authentication process and increase the security in the banking area. By this system we can avoid the ATM robberies and unauthorized persons miss uses the ATM.

Keywords – ATM System, Face Recognition Software (FRS), Security, Iris Technology.

I. INTRODUCTION

In light of the progression of advancement in cash related structure most bank customers using Automatic teller machines, and electronic budgetary trade in site. Most of financial users utilize ATMs for cash transaction like cash withdrawal or cash deposit. ATMs also facing lot of issues caused by customers like many other systems. Some of the problems that customers forgetting their ATM card or cash are common issues. These issues are can be over to increasing security level. The main aim of our work is equipped with computer vision frame work which embedded ATM camera to detect and recognize the person in order to overcome such unnecessary losses caused by CCF. The system will find if there is a different customer entering in to the ATM other than the card holder and if do any transaction in ATM, cash will be retracted at that moment .the image of the person is matched to a gallery image in database, long time before the matching, under different conditions. In this scenario, the matching image and the gallery image are separated by the system.[1]

1. Face Recognition Systems

Face recognition system application is used to identify persons from a digital images or a video from a source. This paper uses face recognition technique for verification in ATM system. For face recognition, there are two types of comparisons. The first step in verification, this is where the system compares the given individual with who that individual says they are and gives a yes or no decision [2]. The second step is identifies this system compares the given image to the other entire image in the database list of matches. Face recognition system is a technology to analyze the unique features of human face like shape of the face, pattern and position of the face. The FRS technology is very complex and mostly based on

software. In Biometric Method, it is setting up the analysis structure with PCA algorithms for every type of biometric. Face recognition starts with a picture, trying to find a person in the image. This can be done by using number of methods including movement, skin color, facial expressions or blurred human shapes etc.Shown in fig (1).



Fig.1.face recognition system.

2. Iris Technology

For all these security features the bank united of Texas had developed first in United States to offer iris technology at ATMs. The customers can do their ATM transaction without card and password. So there's no need to show card and no need of biometric authentication as for show in fig(2). Then no customer inconvenience or discomfort with this process of verification, and they can do their banking transaction without carrying ATM card. Iris scanning computes the quirky pattern in irises, the different collared circles in human eyes. Biometry iris identification works by brighten the iris with IR light to pick up unique form that are not to the eye. Finally the result of iris is containing only set of pixels. Iris recognition technology used to speedup to matching the authorized person and refusal to accept false matches.



Fig.2. iris recognition.

3. How Do They Work?

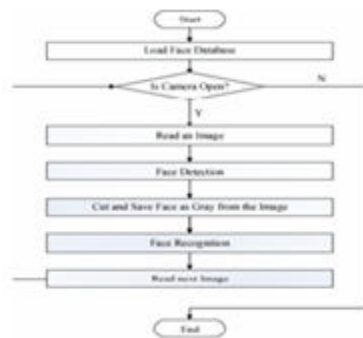


Fig. 3. Working of FRS in ATM.

A database of customers face and iris is maintained by FR system that verifies people face. There are three type of face recognition. the working of FRS is shown in fig (3)

1. Face-detector
2. Eye-localizer
3. Face-recognizer

• Face-detector

The face detector identifies the face, reduce any unwanted, not related to the face detect the facial area and retire the non-facial region in the digital image of the customer to be recognized.

• Eye-localizer

In this step it observe the spot of the eyes, it can be identify position of face accurately

Face-Recognizer

It will look over and find the correct match in the database

II. METHODOLOGY

The first and important step is system will locate a robust open code facial recognition program .it is used to analysis the local feature and pick out at facial verification.Facial recognition process is close with faces by draw out features, from a snap of the face. For suppose an algorithm might be verify the size, position, shape of the nose, eyes, jaw and facial bones. These facial aspects are then used to find matched features. Other calculation deals with an overhang of face pictures and afterward

packs the pictures face data and it spares just the information in the picture that is utilized for face recognition. When a customer approaching to ATM, the camera records face and it will scan eyes and take digital image of iris of eye at distance of 20 to 30 meter. The image will be compute by the system converts iris code's and compared with one of the existing image provided in the bank while opening account[3][5]. Iris scans are more efficient than other verification like biometric and voice recognition. As shown in fig (4).

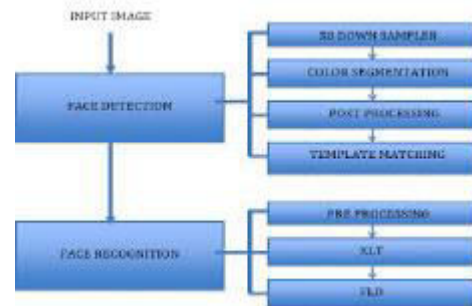


Fig.4.block diagram face recognition system.

1. Techniques

They are of three types

• 2-D Technology

The 2-D acknowledgment strategy was individual of the first systems utilized. It kept up subtleties of people's faces as observed two dimensionally. Subtleties like width of the nose, width of the eyes, separation between the eyes, stunning, cheek bone figure were utilized for differentiate. This kind of face acknowledgment was not very exact. Change in outward appearance or contrast in encompassing lighting on an appearance that isn't straightforwardly investigating the camera didn't create anticipated outcomes [4].

• 3D Technology

Movement in face acknowledgment offered source to the 3-D acknowledgment framework. This ventured up method, utilized facial appearance like shapes of the eye attachments, jaw line, nose, pinnacles and valley on the look for recognizable proof. The database will store subtleties of countenances moreover. The upside of 3-D strategy more than 2-D technique is that 3-D face distinguishing proof works fine regardless of whether the face is turned at 90 degree to the camera. It is self-overseeing of lighting condition and outward appearances.

• Iris Recognition

Disregarding all these security includes; another innovation has been created. Bank United of Texas turned into the first in the United States to offer iris acknowledgment innovation at programmed teller machines, giving the clients a card less, secret phrase free approach to get their cash out of an ATM. there's no card to appear, there's no fingers to ink, no client bother or distress. A key favorable position of Iris acknowledgment

other than its speed of coordinating and its extraordinary protection from bogus matches is the strength of the Iris as an interior and secured, yet remotely unmistakable organ of an eye.

III. ADVANTAGES

1. ATM security model that would expand the presentation consolidate a physical access card, a PIN, and face acknowledgment to build the unwavering quality of ATM exchanges.
2. Finding the legitimate or invalid client and avoiding an inappropriate individual to gets to the ATM.
3. Wrong person wearing cover and have any article he didn't get money and blocked.
4. Verification rates as high as 90% have been achieved when face acknowledgment framework had utilized in ATMs.
5. It has been utilized to reinforce security.
6. It can be utilized to decrease cyber crimes
7. The method utilized in Face Recognition Systems handle the adjustments in the light adequately. This is significant since ATM use happen day and night, with or without counterfeit light.

IV. CONCLUSION

Facial recognition programm is at present capable of give that significant match rates to use in ATM exchanges. Including facial acknowledgment frameworks to the personality affirmation process utilized in ATMs can diminish produced exchanges all things considered. To stay away from atm burglaries and give security to ATM, to make sure about such an unpredictable framework will be considerably more troublesome than structure it. What's more, presently individuals simply start to examine a few issues of ATM security. It will give some understanding to us to actualize security benefits in ATM organize.

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