ATM Security Using Eye and Facial Recognition

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Abstract: With the support of ATM, though banking becomes easier but the chances of fraud are on rampant. There has been countless number of mishap and misrepresentations which usually occurs of in banking transactions. Thus, there is a dire need for development of such system which would serve to protect the consumers from fraud and other breaches of security. This paper proposes the alliance of Face Recognition System for verification process and enhancing the security in the banking region.

Keywords: Face recognition.

I. INTRODUCTION

The rise of technology into India has brought into force many type of equipment that aim at more customer satisfaction. ATM is one such machine which made money transaction easy for customers to the bank. But it has both advantages and disadvantages. Current ATMs make use of naught more than an access card and PIN for uniqueness confirmation. [1] 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 parts of security. This process would effectively become an exercise in pattern matching, which would not require a great deal of time.

II. FACE RECOGNITION SYSTEMS

FRS is an application that mechanically identifies a person from a digital image or a video outline from a video source. [2] One of the behaviors to do this method is by matching chosen facial features from a facial database and the image. In this system, with appropriate lightning and robust learning. Further a positive visual match would cause the live image to be stored in the database so that future transactions would have broader base from which to compare if the original account image fails to provide a match –thereby decreasing...
III. RESEARCH METHODOLOGY

HOW DO THEY WORK: A database of peoples face is maintained by the system that handles face detection. There are typically 3 parts related to a face recognition:

- Face-detector
- Eye-localizer
- Face-recognizer

a) Face-detector:

The face detector spot the face, eliminating any other detail, not related to the face (like the backdrop). It identifies the facial region and leaves the non-facial region in the photo of the person to be identified.

b) Eye-localizer:

It finds the spot of the eyes; so that the position of the face can be identify better

c) Recognizer:

It will check the database to find a match.

Methodology: The first and foremost important step of this system will be to locate a powerful open source facial recognition program that uses local feature analysis and that is targeted at facial verification. Various facial recognition algorithms be familiar with faces by extracting features, from a snap of the subject’s face. For ex, an algorithm may examine the size, relative position, in addition to/or outline of the nose, eyes, cheekbone and jaw. These facial appearances are then used to search for other imagery across matching features. Other algorithm manages a balcony of face images and then compresses the images face information and it saves only the data in the image that is used for face detection.

Techniques and methods

They are of three types:

a) 2-d
b) 3-d
c) Surface texture analysis
Surface-Texture-Analysis

The most superior method is Surface Texture Analysis (STA). STA does not examine the entire face but a patch of membrane on it. This patch is divided into separate blocks. The skin surface, the pore on the skin and other face characteristics are converted to a code. This code is used for comparison.

Iris recognition: In spite of all these security features; a new technology has been developed. Bank United of Texas became the first in the United States to offer iris recognition technology at automatic teller machines, providing the customers a card less, password-free way to get their money out of an ATM. [4] there”s no card to show, there's no fingers to ink, no customer inconvenience or discomfort. It's just a photograph of a Bank United customer's eyes. Iris recognition is an automated method of biometric identification that uses mathematical pattern-recognition techniques on video images of one or both the issues of an individual”s eyes whose complex patterns are unique, stable, and can be seen from some distance.

How the system works: When a customer puts in a bankcard, a stereo camera locates the face, find the eye and take a digital image of iris at a distance of up to two to three feet. The result computerized „iris code”s compared with one of the customer will initially provide the bank. ATM won”t work if the two codes don’t match. The camera also does not use any kind of beam. Instead, a special lens has been developed that will not only blow up the image of the iris, but provide more detail when it does. Iris scans are more accurate than other high-tech id system available that scan voices and fingerprints.

IV. CONCLUSION

We thus develop an ATM model which provides security by using Facial verification software. Adding up facial recognition systems to the identity confirmation process used in ATMs can reduce forced transactions to a great extent. Using a 2d and 3d technology for identification is strong and it is further fortified when another is used at authentication level.

V. REFERENCES


