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"Biometric Authentication based Secured ATM Banking System: A Review"

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Abstract: This Biometric Authentication Based Secured ATM Banking system is need for improving security in banking sector. With the arrival of ATM though banking became a lot easier it even became a lot accessible. The chances of harm of this much devoted 'insecure' the biometric technology. A product (ATM) is manifold due to the aggressive growth of 'intelligent' criminals day by day. ATM systems today use no more than an access card and PIN for identity verification. This situation is afflicted since great progress has been made in biometric recognition techniques, including finger print, facial recognition and iris scanning. The research of such a system would serve to secure consumers and commercial institutions a like from scam and other rift of security. A required image is acquired at transaction fatal and Bio characteristics points are separated from the actual image. User password is encrypted using some selective article points. The proposed design is self contriving, simple, fast and yet much more secure. The adequacy of this computer clone of bio-metric authentication system assertion a secure online transaction

Keywords: Biometrics, Security, Authentication, Evolution.

I. INTRODUCTION

There is of technology in India has brought into force many types of equipment that aim a more customer pleasure. ATM is one such machine which made money transactions easy or customer to bank. The other side of this improvement is the enrichment of the culprit's possibility to get this 'unauthentic share. Traditionally security is handled by requiring the fusion of a real access card and a PIN or other password in order to access a customer's account. In this paper, we will also looking to an automatic teller machine security model providing the customers a card less password freeway to get their money out of an ATM.

There are three ways to verify the identity of an individual, these include dominion (such as keys, passports, and smartcards), knowledge (user ID, passwords and pass phrases), and biometrics. These three modes of authentication can be joined, especially in automated validation e.g. a password plus a user ID, an ATM card compelling a PIN, a passport with a face picture and signature biometrics, etc. Identity validation becomes a challenging task when it has to be automated with high accuracy and hence with low probability of break-ins and reliable non-repudiation so its challenging task. The user should not be able to refuse having carried out the transaction and should be disrupts as little as possible, which only makes the task more difficult.

II. GENERAL BLOCK DIAGRAM

A. BIOMETRIC INPUT:-

The input consists of biometric recognition scheme such as fingerprint, retina scan, iris scan, voice etc.

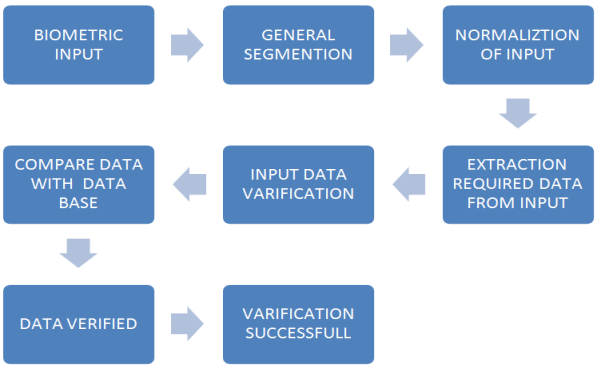

FIG 1:GENERAL BLOCK DIAGRAM

B. GENERAL SEGMANTION:-At this stage the image is extracted from the input. The extracted region was the normalized into a rectangular block having fixed dimensions for imaging inconsistencies

C.NORMALIZATION OF INPUT:-As the image is captured under different conditions like non-uniform brightness, eye blink, pupil radius change due to varying lighting etc, it is possible for the output of images to be in different sizes. These variations may affect the results of image matching. To overcome this issue, image has been converted to standard size this process is called normalization

D.EXTRACTION:-In process is based on spatial domain thinking. The original image has low contrast and may have non-uniform brightness caused due to the change in

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position of the light source. These problems may affect next feature separation and matching process. In order to obtain a well-distributed texture image, the image is enhanced using local histogram equalization.

E.COMPARE DATA WITH DATABASE**:-**

In the compare process, the separated features of the input are compared with the images in the database. If 70% similarity is found, the subject is then identified.

F.VERIFICATION:

In this process the input data is verify by domain. The data verify on their input basis such as fingerprint, iris scan etc.

III. LITERATURE REVIEW

A. IRIS RECOGNITION TECHNOLOGY**:-**

Iris recognition is a method of biometric authentication that uses pattern-recognition techniques based on high-resolution images of the irises of an individual's eyes. The iris is captured via an coral imaging process, which identify the iris from the pupil of the eye. The image is then derived from an analysis of the detail within the triangular network of the iris. Iris recognition technology uses camera technology, with subtle infrared brightness reducing unique reflection from the convex cornea to create images of the detail-rich, complex structures of the iris. These images are converted into digital figure to provide mathematical representations of the iris that yield distinct positive identification of an individual. These algorithms were used to effectively debut of the technology in conjunction. An iris recognition algorithm first has to identify the relatively concentric circular outer boundaries of the iris and the pupil in a photo of an eye. The group of pixels covering only the iris is then converted into a bit pattern that conserves the information that is important for a statistically meaningful comparison between two iris images. In the case of Daugman's algorithms, a Gabor wavelet transform is used in order to divide good signal noise form the camera. The result it get good picture.

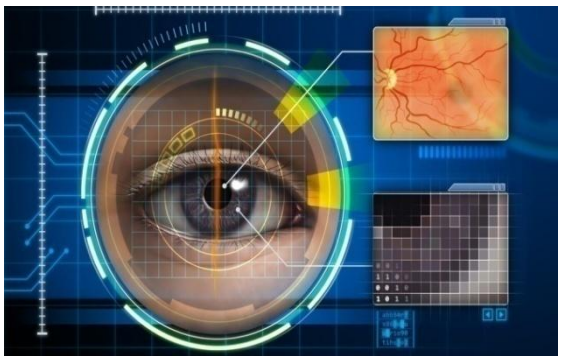

FIG 2: IRIS RECOGNITION TECHNOLOGY

All amplitude information is neglected (to ensure the figure remains largely unaffected by changes in brightness and nearly negligibly by iris color, which contributes significantly to the long-term stability of the biometric figure) and the resulting 2048 bits that represent an iris consist of only the sign bits of the Gabor-domain representation of the iris image. To authenticate via identification (one-to-many figure matching) or verification (one-to-one figure matching), a template created by imaging the iris is compared to a stored value figure in a database.

B. FACIAL RECOGNITION TECHNOLOGY**:-**

A facial recognition technique is an program of computer for automatically analyze or verifying a person from image or a video from a database source. It is the most natural means of biometric validation. Facial detection technologies have recently redefined into two areas and they are Facial rhythmic. Facial rhythmic technology relies on assemble of the specific facial appearance (the system usually look for the position of eyes, nose and mouth and distances between these arrival, Recognition of face from body. The face sector is regaled to a fixed pre-defined size. This normal face image is called the approved image. Then the facial rhythmic are computed and stored in a face figure.

FIG 3: FACIAL RECOGNITION TECHNOLOGY

C.FINGERPRINT RECOGNITION**:**

A fingerprint is an impression of the texture of all or any part of the finger. A friction wrinkle is increase portion of the on the palm or fingers and toes or sole skin, consisting of one or more connected wrinkle units of friction wrinkle skin. These wrinkles are sometimes known as "dermal wrinkles" or "dermal ". The traditional method uses the ink to get the finger print onto a piece of paper. This piece of paper is then scan secure a classical scanner. Now in modern way, live finger print readers are used .These are based on optical, thermal, silicon or ultrasonic principles. It is the oldest of all the biometric techniques. Optical finger print reader is the most common at present. They are based on impression changes at the blot where finger popularly lines touch the reader surface. All the optical fingerprint readers compose of the source of light, the light sensor and a special impression surface that changes the impression according to the pressure. Some of the readers are fitted out with the processing and memory chips as well.

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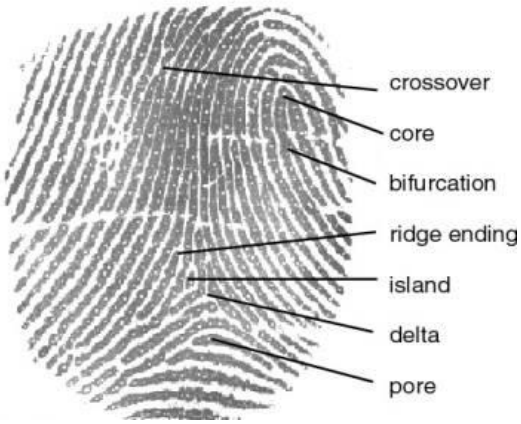

FIG 4: FINGERPRINT RECOGNITION

D.VOICE RECOGNITION:-

Voice is also physiological trait because every person has different speak, but voice recognition is mainly based on the study of the how good a person speaks. Sound verification focuses on the vocal characteristics that produce voice and not on the sound or the pronunciation of speech itself. The sound quality depends on the dimensions of the vocal tract, mouth, nasal cavities and the other voice processing mechanism of the human body. It does require any simple mic and cheap hardware. Input sound is seen as non-invasive. The technology needs additional hardware by using existing microphone.

FIG 5: VOICE RECOGNITION

REVIEW OF BIOMETRIC FEATURE

BIOMETRIC	Eye-iris	Eye-retina	Facial recognition	Fingerprints
Reliability	Very High	Very High	Average	High
Accuracy	High	High	Low	High
Stability	High	High	Average	High
Interference	Glasses	Irritation	viewing position	Dirtiness , Injury
Security	Very High	High	Average	High
Cost	High	High	Medium	Medium
Acceptance	Medium-low	Low	High	Medium

TABLE 1: REVIEW OF BIOMETRIC FEATURE

Performance Evaluation: The performance evaluation of proposed method was measured by the two error rates such as FRR (False Rejection Rate) and FAR (False Acceptance Rate). The FAR and FRR was computed as

$$\text{FAR \%} = \frac{No\ of\ false\ acceptances}{Total\ no\ of\ imposter\ \ attempts}$$

$$\text{FRR \%} = \frac{No\ of\ false\ rejection}{Total\ no\ of\ aut\,hentic\ \ attemptes}$$

Papillary zone and these two zones are divided by the collarets which appears as a zigzag pattern.

EVOLUTION TABLE

TABLE 2: EVOLUTION TABLE

BIOMETRIC	FER	FAR	FRR
Eye-iris	0.1%	.94%	.99%
Facial recognition	NA	1%	10%
Fingerprints	2%	2%	2%
Voice	6%	2%	10%

IV. CONCLUSION

Fingerprint has a long way of its use as an enduring validation in law administration and its samples can be collected with ease. Speaker recognition is attractive because of its popularity in human day-to-day communication and conversation biometrics provides higher accuracy and affability. Face recognition uses low-power infrared illumination to obtain robust images under poor lighting conditions, its systems are the least intrusive from a biometric sampling point of view and it is a fairly good biometric identifier for small-scale verification applications. Iris recognition has the smallest outlier group of all biometric technologies, it is well-suited for one-to-many identification because of its speed of comparison and template longevity is a key advantage of this technology. We can use either single biometric trait or multiple biometric traits. Single biometric trait also has some limitations so to overcome these limitations we use multi biometric authentication which gives result with more accuracy but also requires more storage as compared to single biometric. The influences of biometric technology on society and the risks to privacy and threat to identify will require mediation through legislation. For much of the short history of biometrics the technology developments have been in advance of ethical or legal ones version of this template is V2. Most of the formatting instructions in this document have been compiled by Causal Productions from the IEEE LaTeX style files. Causal Productions offers both A4 templates and US Letter templates for LaTeX and Microsoft Word. The LaTeX templates depend on the official IEEEtran.cls and IEEEtran.bst files, whereas the Microsoft Word templates are self-contained.

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BIOGRAPHIES

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