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ABSTRACT

Automated Teller Machine(ATM) fraud have been trending now a days, so, we have come up with the solution of replacing the ATM cards with the Voice and Face Recognition so that the privacy of withdrawing or balance enquiry should be taken care of by our system. We have tried to replace the keypad with voice recorder device so that voice should be recorded. Our System would have Two-Step verification process. Our main intention to make this type of system is because to increase the security of the Atm System.

KEYWORDS: Smart Atm, Voice Recognition, Face Recognition, Machine Learning , Database.

1. INTRODUCTION

In the field of Biometrics, with the general term used alternatively to point out a characteristic or process.

As a characteristic it's a measurable biological otherwise called anatomical and physiological and behavioural characteristic which will be used for automatic recognition. As a process it encompasses automated strategies of recognizing a personal supported measurable biological anatomical and physiological and behavioural characteristics. Biometrics is an automated methodology to uniquely identify humans using their behavioural or physiological characteristics.[1-4, 23, 24]

Recognition during this technology plays a serious role, recognition employed in the outline of biometric systems likefacial recognition, finger print, iris recognition or voice recognition relating to their fundamental function, the generic term however doesn't essentially imply verification closed-set identification or open-set identification[7-9, 22, 24]

Verification is that the task wherever the biometric system associate attempt/tries to verify an individual's claimed identityby comparison a submitted sample to at least one or a lot of antecedently listed templates [14-18]. Figure 1 show theconcept of recognition and verification of voice and face that is feather illustrated by theimage below wherever the primary image or voice resembles the second image or voice



Figure 1: Image resembling

Identification is the task where the biometric system searches a database for a reference finding a match for the submitted biometric sample; a biometric sample is collected and compared to any or all the templates within the database. If it's close-set identification, the submitted biometric is thought to exist within the info. If it is open-set identification, the submitted biometric sample isn't certain to exist within the info, the system determines if the sample exists or not [18]. Figure 2 shows the process of identification.

In ATM's such a concept could be used to reinforce the one used by ATM's being Card + Password will allow you to access your banking details, as robust as this might seem, if someone has access to the two it will be easy to obtain your life savings[4,6]. However, if there is one thing two can't get hold of is your face and voice or tone or pitches making this an impenetrable system which will not need much processing time [4]

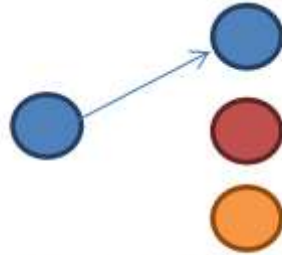


Figure 2: Process of identification

1.1. Biometric Predecessors

The first form of biometrics ever used date way back to the cave men who used hand prints as an unforgeable signature these prints can still be seen in caves such as the caves in Tsodilo hills in African country

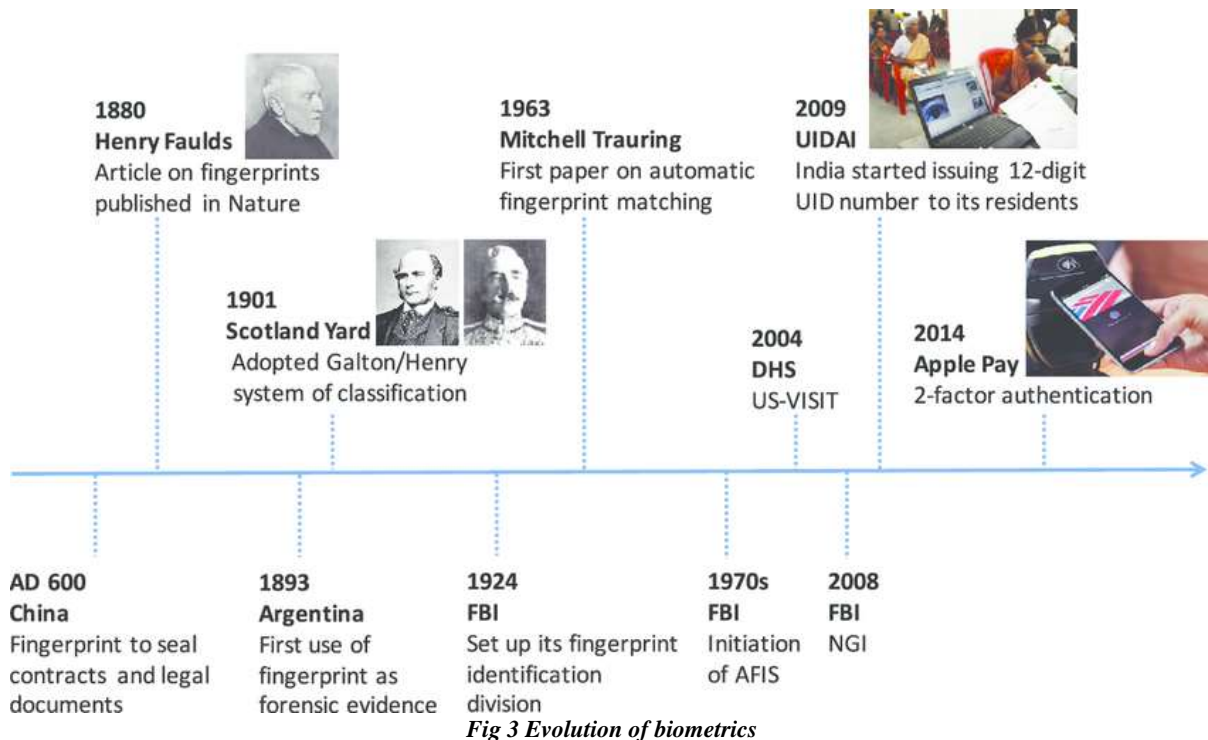
(Africa) that has paintings thought to be quite twenty,000 years old, however some evidence suggests fingerprints were used as folks mark as early as five hundred B.C The early Chinese merchants used fingerprints to settle business transactions they conjointly used finger and footprints to distinguish between children from each other.

The early Egyptian traders were known by physical descriptors to differentiate between trustworthy traders of proverbial name and former triple-crown transactions, and people unaccustomed the market.

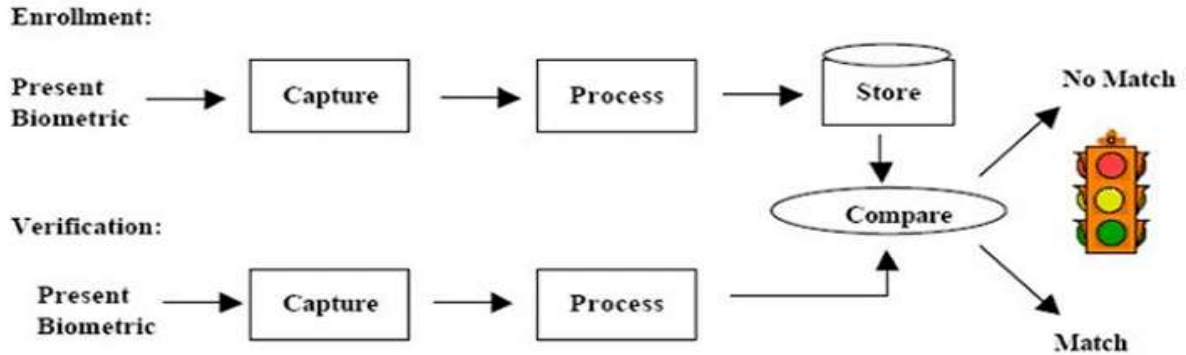
1.2. Standard Biometrics

Biometric technology is employed to assist users deploy and maintain systems in a better manner, with no need to bear in mind codes or eliminate the utilization of keyboards or maybe keys for that meter. Can be used to promote longevity and enable interoperability. For national and international efforts developing standards for; Technical interfaces, information interchange formats, testing and coverage, social problems.

Fig 3 shows the evolution of biometrics.

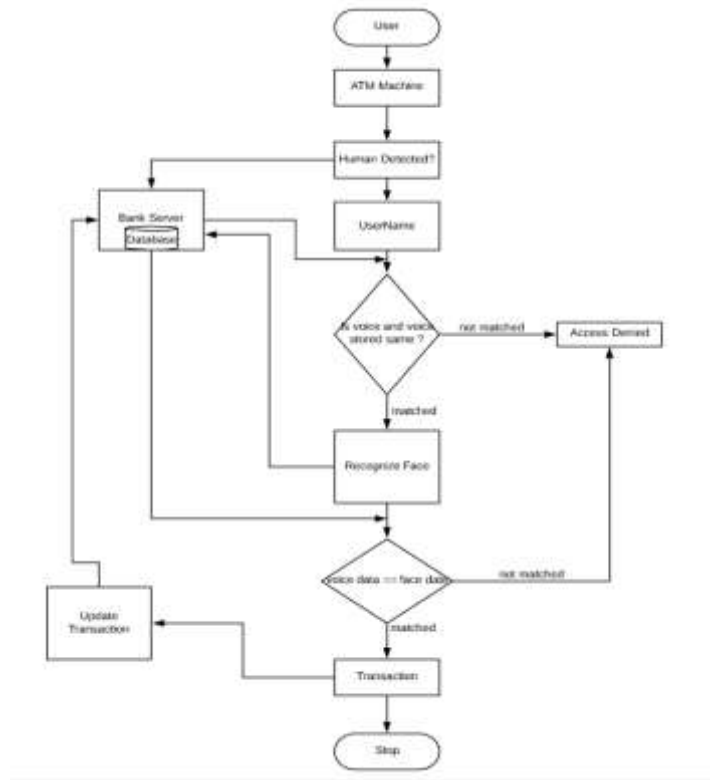


1.3. Working of Biometrics -



2. WORKING & PACKAGES

Flow-Chart:



Working of Smart ATM machine.

Packages and Platform used -

- OpenCv2
- Facial recognition
- Imutils
- apiai
- assemblyai

- google-cloud-speech
- pocket sphinx
- Speech Recognition
- Watson-developer-cloud

3. CONCLUSION

In this paper we have tried to implement the Smart Atm System using Voice and Face Recognition theoretically. This System will be useful as the security in ATM machine. Accuracy of the machine depends on the by updating the photos and voices in database. We can Use ANN to get the best result in the future.

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