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A Review on Emerging Biometric Techniques used for Human Recognition

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Abstract: Biometric is the very famous measurement and analysis the psychological and behavioral techniques. This method are mainly used for the security purpose in personal and the public uses. It is a new way to verify authenticity to control the electronic crimes. The biometric characteristics like face, finger, iris, scanning, voice used for security level but also new and emerging biometric techniques has to be developed to give better performance.

Keywords: *Biometric systems, Methods, EEG biometrics, Skin spectroscopy, Finger nail recognition.*

1. INTRODUCTION

The main aim of biometric is to detect active in misuse by users.This simulation has taken place at the Digital image processing. The different methods are used by different users in the basis of pin number and user authentication. Biometrics is a statistical study of biological and physiological data, the use of measurable for several security purposes such as fingerprints or iris paatterns to identify a person to an electronic system. Biometric based traits of human body started in the early past. There are two types of biometric methods:

Physiological characteristics : The composition or shape of the body. Examples: face detection, fingerprints, hand geometry and iris recognition.

Behavioral characteristics : Behavioral biometrics are used information security to identify individual by their unique feature. Examples: EEG signal.

2. EXISTING BIOMETRIC RECOGNITION

2.1. Face recognition

In this biometric method single person can be indentify by digital image data with already saved file for that person. This method commonly used for security purposes.

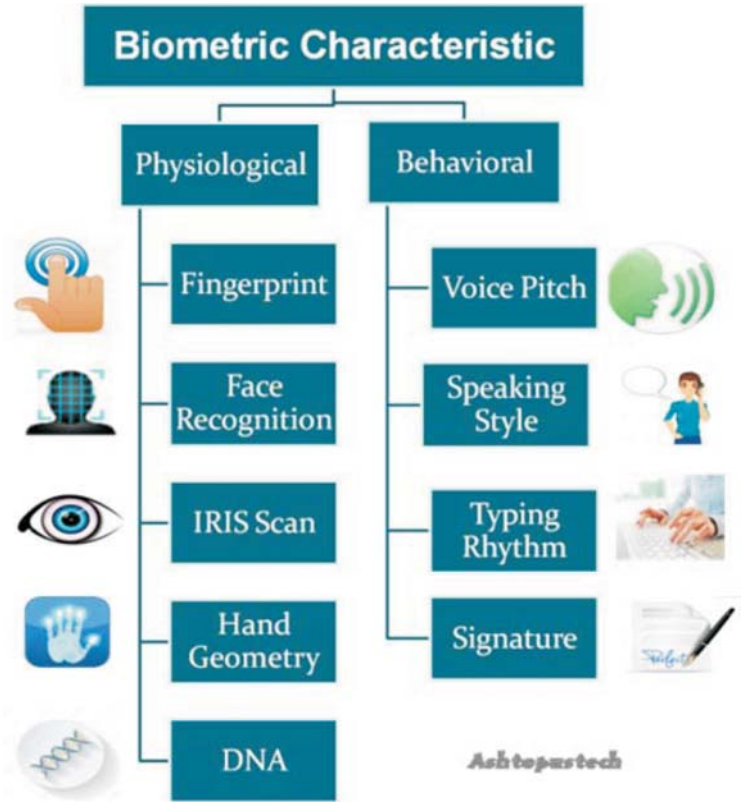

Figure 1: Biometric Characteristic

2.1.1. Disadvantage

Face recognition is not perfect because of weak lighting, lengthy hair, big laugh can affect the system performance.

Figure 2: Face recognition

2.2. Iris Recognition

Iris recognition is a biometric method that uses mathematical pattern recognition.An individual eye are unique, and stable.

2.2.1. Disadvantage

Some people will suffer from disease that time changes may occur in iris which affects recognition

Figure 3: Iris

2.3 Finger print

Finger print recognition is a biometric method. it is used for identifying unique person by an impression made by person fingertip.

2.3.1. Disadvantage

Fingerprints can make a mistake because of dryness,with children the size of the fingerprint change quickly.

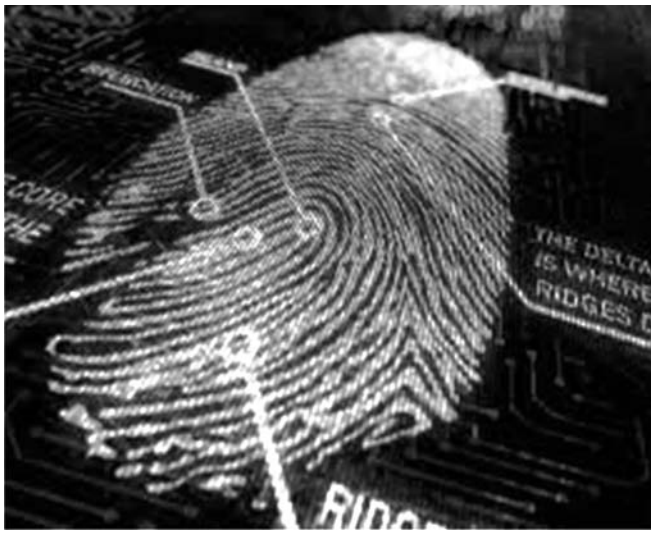

Figure 4: Finger print

2.4. Lips

Lips recognition is a technology used to identifing the human lips. It consider lips shape and colour to determine human identity.

2.4.1. Disadvantage

Lips can also make a mistake because of climate change so that time lips may be dry or occur crack.

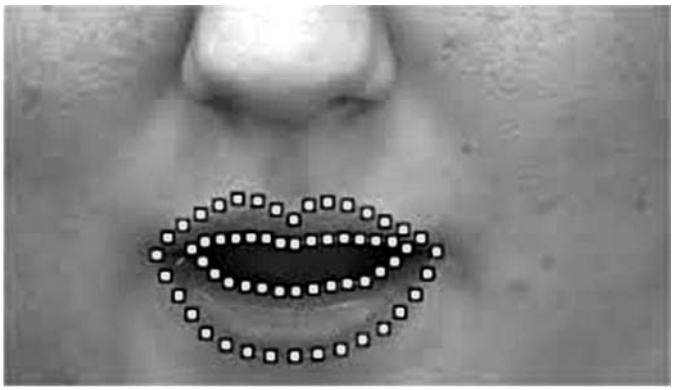

Figure 5: Lips

2.5. Voice

Voice recognition is a biometric method ,especially for the purposes of identifying an individual voice.

2.5.1. Disadvantage

In voice recognition words and sound very similarly. Case: two, to, too.

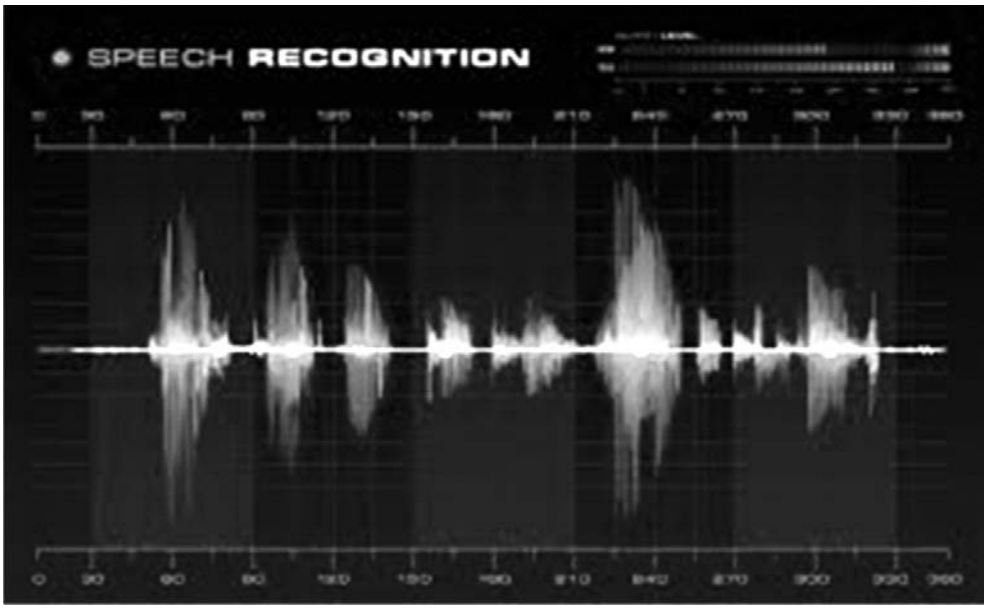

Figure 6: Voice prints

3. EMERGING BIOMETRICS METHODS

In the traditional biometric techniques suffers from disadvantages. In each biometric identification system there is a chance of biometric data theft which is unique .Hence researchers are finding new biometric methods. These have more advantages compared to traditional biometric.

3.1. EEG biometrics

Electroencephalogram (EEG) based biometrics, representing the unique human brain activities, have emerged as a new and promising way for labeling each individual person. It records the brain activity and can obtained by measuring the skin by using scalp surface of the electrodes. This activities to determined by the person's closely associated with each individual's unique memory and knowledge base, thus it is impossible to imitate others' brain activities. It is every Expensive, Time consuming ,Invasive,Artefacts and Hard to interpret.it is easy to access to the CNS.

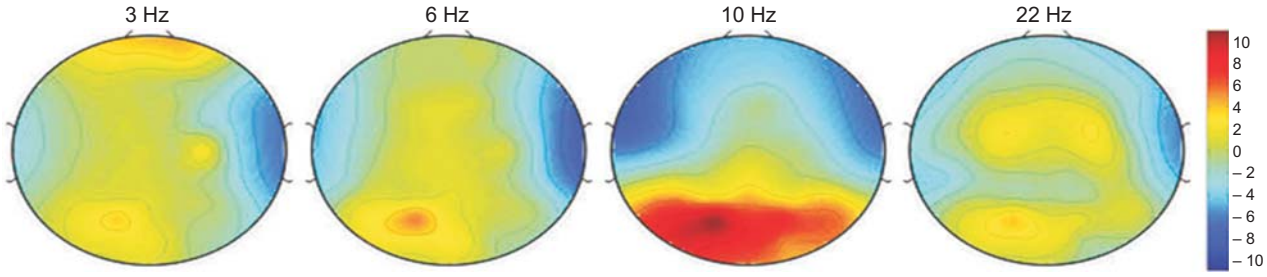

Figure 7: Egg biometrics

3.2. Skin spectroscopy

Skin spectroscopy organ made up of multiple layers like hair damage and sweat occur. Each person skin is structurally different from one another. Skin layers has differences from thickness and interfaces, skin layers have different of each other characteristics. The skin layers of size and density are differ from person to person with chemicals of these layers.This flame is not suitable for elements,Initial cost of ICP instrumentation and Continuing cost of operation also high.It is a Rapid and Multielement spectroscopy.

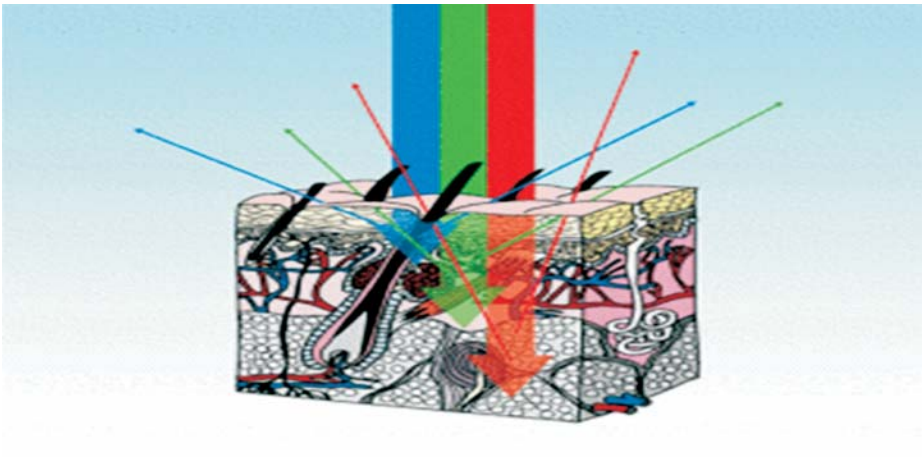

Figure 8: Skin spectroscophy

3.3. Finger nail recognition

We make Nail simulates the user, to the system. AR technology we make through the system. While the image is displayed on the decorated anatomy. Our system is essential finger mage is displayed in anatomical position. The fingernail is necessary for our system by It simulates the user to nail. AR technology we make through the system. While the image is displayed on the decorated anatomy. Finger is essential to our system. Ogawa

skin color recognition proposed by the recognition of a finger tip. We propose the recognition of a finger tip to finger through recognition. Authentication can be done with a finger tip of the finger is recognized, but this is wrong. Recognition of the palm and back of the hand does not show a finger tip. It is still related to criminal identification, so it is very intrusive to some people. Biometric technology is very economical with very high accuracy. It is very easy to use.

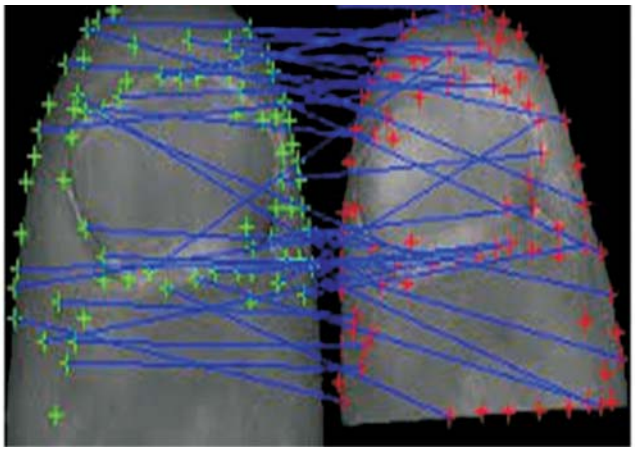

Figure 9: Finger nail recognition

4. COMPARISON OF EMERGING BIOMETRICS

Table 1
Comparison of Emerging biometrics

Biometrics	*Cost*	*Accuarcy*	*Long term stability*	*Security level*	*Size of template*
EEG biometrics	High	High	Small	Low	High
Skin spectroscopy	Low	Medium	Large	Medium	Low
Finger nail recognition	Medium	High	Large	High	Medium

5. CONCLUSION

Biometrics are used for security purpose,it provides us to improve our lives in a way to decreasing in theft and increasing security level. As this is a new emerging technology in the future it could be very secure since it has simply implemented in public areas for short period of time.Biometrics technology is very useful in future .In this we are getting safe and secure of ways for our daily lives.In a crowd we can easily identify a person, so we can easily verify their identity. This new emerging biometric technology will help us to reduce the fraud,theft,and criminal offense in the world. So we have to work upon to make it more effective.

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