DIGITAL IMAGE PROCESSING BASED VOTE POLLING USING MAT LAB AND CRYPTOGRAPHY

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ABSTRACT - *In this modern society, theft has become major concern for protecting the information. The loss of valuable information leads to a number of personal and legal issues. People are concerned about securing access. Due to increase in theft & forgery in polling each and every human losing their fundamental rights to poll vote for their leader. As a result of this, the democracy has been shifting more towards autocracy. As a responsible people, we should present a way to fraud detection using this "Fingerprint Technology".*

Keywords: Image Processing, Mat Lab, Cryptography, Finger Print, Security.

1. INTRODUCTION

1.1 IMAGE PROCESSING

We use the sensors to scan the fingerprint image, and we create a database of scanned images which are stored in a network in a distributed manner.

1.2 MATLAB

We use a AI techniques and mat lab program to process the image.

1.3 NETWORK

Image database is stored in a distributed manner and each district & state. We can protect the data using the algorithm which we developed "SHIFT DIFFERENCE ALGORITHM". We use end – end encryption: ie encryption and decryption is done only at receiver and sender side. Using sensors, we are able to provide information about the age, gender, and name of the voter. Whenever voters register his vote, his fingerprint is searched in database and checks whether the voter has already voted or not. This avoids fraud, this is our primary focus.

1.4 BIOMETRICS

Biometrics enables the identification of a person based on his or her physical characteristics and/or behavior. Common biometrics include: fingerprint, voice pattern, retinal pattern and facial features. Among this large variety of biometric possibilities, the use of fingerprint for identification and verification dominates the market. There are many reasons

for this including the low cost, high-reliability and fast response of the fingerprint technology and systems. The use of fingerprints for user authentication has been on the rise as people have discovered many problems with password and hardware token-based systems.

Fig. 1.1 Finger Print Scanning

2. DIGITAL IMAGE PROCESSING

Digital image processing methods were introduced in 1920, when people were interested in transmitting picture information from one image of size 256*256 was about a week.

Steps in digital image processing are as follows,

1. Image grabbing or acquisition
2. Preprocessing
3. Segmentation
4. Representation and feature extraction
5. Recognition and interpretation

The main aspects in digital image processing are image representation. Any monochrome image can represented by means of a two-dimensional light intensity function $f(x,y)$, where x and y denotes spatial co-ordinates and the value of x at any point(x,y) is the gray level or the brightness of the image at the point.

2.1 MATLAB

MATLAB is known as matrix laboratory which is used for coding the programs for analyzing and predicting the age, gender and identification of human. At first we convert the rgb image into the gray scale image. Normally the image processing tool box is used to read the image and show the image. It has two advanced image processing concepts. They are

1. Read and display an image
2. Adjust the contrast

The edge calculation is the important of image identification process thus the program is given below:

Steps involved in collecting DATABASE:

ENROLLMENT:

1. Fingerprint scanning
2. Image capture
3. Minutiae extraction
4. Save template in memory

VERIFICATION:

1. Fingerprint scanning
2. Image capture
3. Minutiae extraction
4. Verification template
5. ACCEPT or REJECT

2.2 GENDER IDENTIFICATION

A novel method for human gender classification by measuring the Raman spectrum of fingernail clippings. As Raman spectroscopy reveals the characteristics of vibration frequencies of the fingernails, it provides unique chemical fingerprints that can be used to describe the molecular structure differences of fingernail between males and females.

Fig 2.1 Verification and Enrollment

As the differences of Raman spectra of human fingernails are very subtle, they are enhanced by using a pattern recognition method.

In the present study, a combination algorithm of principal component analysis (PCA) and support vector machines (SVM) was implemented to perform the data classification. This combined algorithm provides a classification accuracy of up to 90%. The success of this present method may be used as an alternative rapid tool to identify human gender in forensic applications.
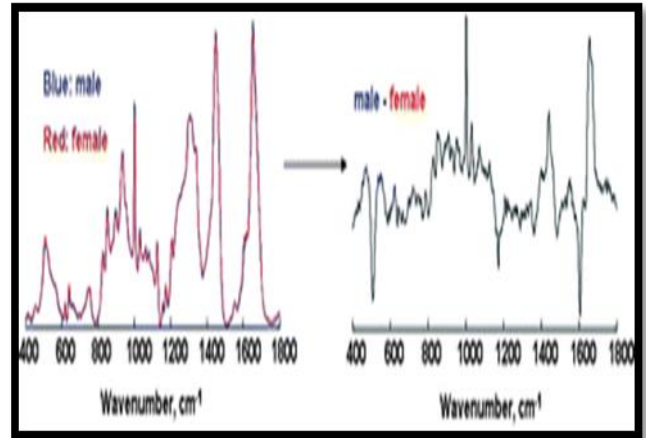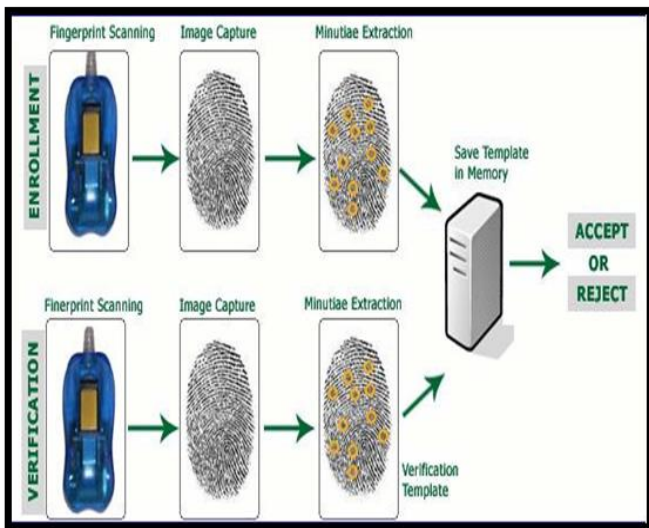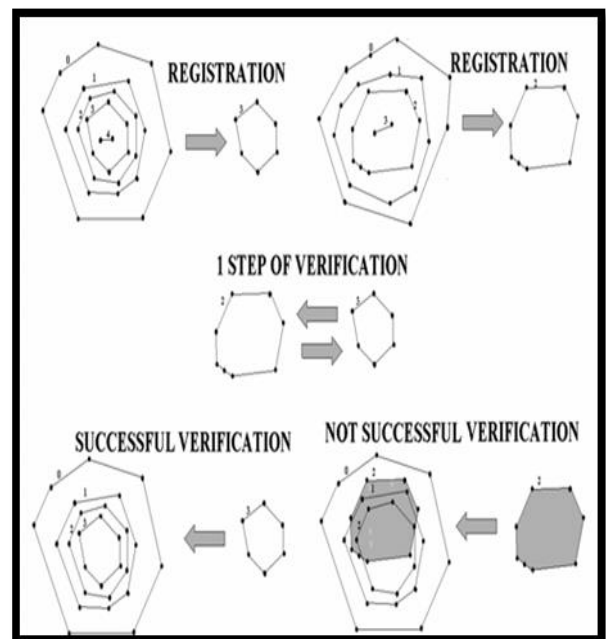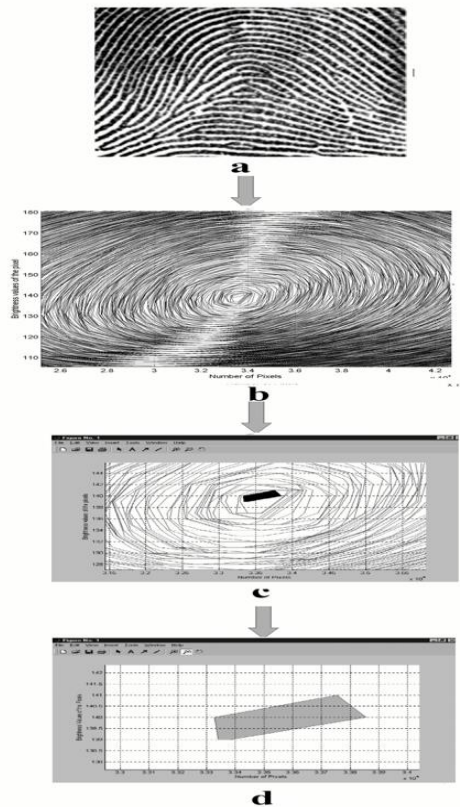

Fig 2.2 Gender Identification

2.3 AGE IDENTIFICATION

Similar to our gender identification the minutiae s using to predict the cells life with the help of genetic algorithm in mat lab & C language

2.4 PICTURIZATION

Fig 2.4 Picturization

EXPERIMENT

Fig. 2.5 Technical Evaluation of Fingerprint Scanner
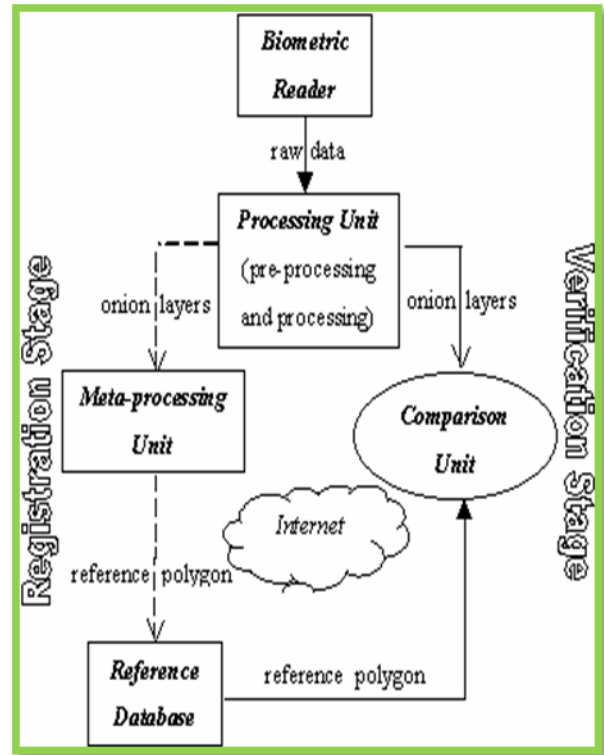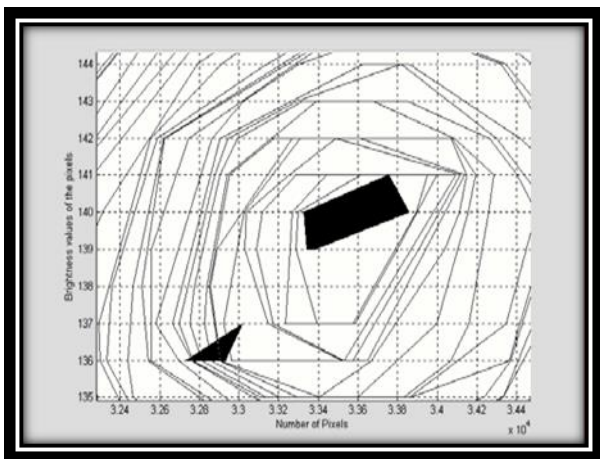

Fig 2.6 Fingerprint Networking

2.5 SECURE NETWORK VERIFICATION

In network we use distributed network for every state as well as every district so time should minimizing automatically verify the database which we saved previously. The flow chart explain very simple manner.

FLOW CHART

Fig .2.7 Biometric Reader Process

REGISTRATION STAGE and VERIFICATION STAGE are two discrete stages.

BIOMETRIC READER: It accepts a user's analog fingerprint and transforms it into digital information.

PROCESSING UNIT: it takes input as the raw information provided by the reader, and extracts the onion layers from the data. These are send to meta-processing unit (during registration) or to the comparison unit (during verification).

META PROCESSING UNIT: It isolates the smallest convex polygon from any set of onion layers it get from the processing unit and submits the reference database.

COMPARISON UNIT: It intersects and compares the onion layers provided by the processing unit with the reference polygon provided by the reference database.

REFERENCE DATABASE: It stores the user's reference polygons, or provided by the meta-processing unit during registration or provides a user's reference polygon.

3. CONCLUSION

Taking into account of the results of the experiment uses to deliver election result very quickly, and also explain who are all supporting (gents, women's, youngsters, old age people)like this we segregate our results within one hour.

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BIOGRAPHIES

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