

Traffic Police Android Application Using IoT

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Abstract- Fingerprints are rich in details which are in the form of discontinuities in ridges known as minutiae and are unique for each person. One of the most important tasks considering an automatic fingerprint recognition system is the minutiae biometric pattern extraction from the captured image of the fingerprint. The fingerprint matcher compares features by using Digital Image processing from input search point against all appropriate driving licences in the database to determine if a probable match exists. With this implementation, there'll be no need to carry documents along. A single fingerprint and an image will be enough to recognize and verify the individual and the vehicle.

Keywords- Image Segmentation, Minutiae, Fingerprint

I. INTRODUCTION

The Internet of Things represents a general concept for the ability of network devices to sense and collect data from the world around us, and then share that data across the Internet where it can be processed and utilized for various interesting purposes. Internet Of Things (IoT) is A System Of Interrelated Computing Devices, Mechanical And Digital Machines, Objects, Animals Or People That Are Provided With Unique Identifiers And The Ability To Transfer Data Over A Network Without Requiring Human-To-Human Or Human-To-Computer Interaction. A Thing, In the Internet Of Things, Can Be A Person With A Heart Monitor Implant, A Farmanimal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low -- or any other natural or man-made object that can be assigned an IP address and provided with the ability to transfer data over a network. IoT has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS), micro services and the Internet.



Figure 1: Internet Of Things

Finger Code uses circular tessellation of filtered fingerprint images centered at the reference point, which

results in a circular ROI generally containing 80 sectors. The ROI is further processed to generate eight-dimensional this Finger Code method cannot guarantee that a reference point will be found on every type of fingerprint image such as the arch-type and for the poor quality fingerprint image, Biometrics are used as an automated process of recognizing an individual based on their physical or behavioural characteristics. Later, devices such as access cards evolved into smart cards, which contain a limited amount of storage capacity. Fingerprint recognition is one of the most important biometric technologies based on fingerprint distinctiveness, persistence and ease of acquisition. Although there are many real applications using this technology, its problems are still not fully solved, especially in poor quality fingerprint images and when low-cost acquisition devices with a small area are adopted.



II. TRAFFIC POLICE APPLICATION ARCHITECTURE

A demonstrator has been developed using a commercial fingerprint sensor and a general-purpose FPGA board. The FPGA board also includes an USB microcontroller that the demonstrator can be connected via USB to a PC. The PC is used to download the program files in the FPGA and to visualize results from the demonstrator. Biometric solutions are widely employed for individual recognition. In particular, fingerprint recognition is widely accepted for its distinctiveness and ease of use. Most of fingerprint recognition systems carry out complex algorithms that have to be implemented in hardware platforms with high computational resources to offer real-time performance. To include fingerprint recognition in small devices such as wearable devices, car keys, etc., dedicated hardware solutions are demanded. Complexity of the algorithms should be

reduced to offer real-time response with small size and power consumption.

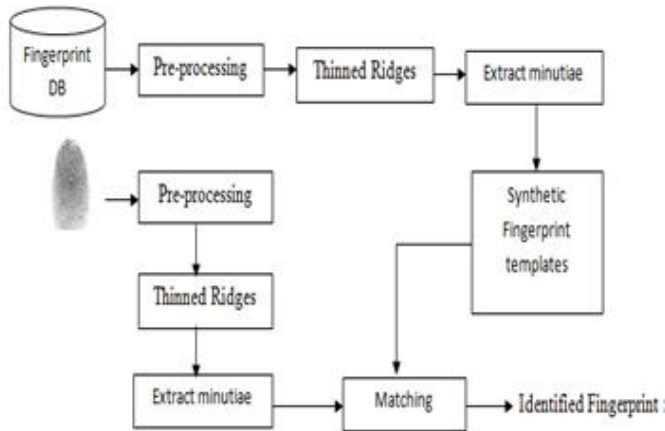


Figure 2: System Architecture

III. MOTIVATION

- The advantage of biometric is that it is always carried by person.
- There is no fear of losing it or forgetting it anywhere .
- It is also difficult to forge or steal somebody’s biometric identity

IV. INDENTATIONS AND EQUATIONS

EUCLEDIAN DISTANCE:

The features of test image is compared with features of database images using Euclidian Distance

$$d1(p, q) = \sqrt{\frac{1}{M} \sum_{i=1}^M (p_i - q_i)^2}$$

Where, M = the dimension of feature vector.
 Pi = is the database feature vector.
 qi = is the test feature

V. CONCLUSION

In this paper, we have proposed a trigon based security protocol to protect the fingerprint information from the prohibited users. The proposed fingerprint security protocol performance was evaluated by using the more number of fingerprint images. The experimental results proved that our proposed Trigon based fingerprint security protocol has given high performance security when protect the fingerprint information from the illicit users. The proposed trigon based protocol performance in protecting fingerprint information was tested with authenticated and unauthenticated

users. When the unauthenticated users try to access the feature database, our proposed security protocol eliminates their access based on their authenticated elements.

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