

SECURITY-ENHANCED AUTHENTICATION SYSTEM BASED ON WSN

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ABSTRACT

In today's technically advanced world, autonomous systems are gaining rapid popularity. As the social computerization and automation has been increased and the ATM and credit card has been installed and spread out to simplify the activity for financial activity, the banking activity has been simplified, however the crime related with financial organization has been increased in proportion to the ratio of spread out of automation and devices. Security of one-time password is essential because nowadays most of the e-commerce transactions are performed with the help of this mechanism. The security is required for dual purposes. They are, i) to protect customers privacy ii) to protect against fraud. While more than two parties communicate to each other then they worry about confidentiality, data authentication, non repudiation. of biometric verification

1.INTRODUCTION

In iris recognition, the identification process is carried out by gathering one or more detailed images of the eye with a sophisticated, high-resolution digital camera at visible or infrared (IR) wavelengths, and then using a specialized computer program called a matching engine to compare the subject's iris pattern with images stored in a database. The matching engine can compare millions of images per second with a level of precision comparable to conventional fingerprinting or digital fingerscanning.

In order for iris recognition to provide accurate and dependable results, the subject must be within a few meters of the camera. Some control mechanisms must be implemented to ensure that the captured image is a real face, not a high-quality photograph. The ambient lighting must not produce reflections from the cornea (the shiny outer surface of the eyeball) that obscure any part of the iris. The subject must remain stationary, or nearly stationary, with respect to the camera, and must not be hostile to the process. Certain types of contact lenses and glasses can obscure the iris pattern.

2.EXISTING SYSTEM

2.1 Sepehr Attarchi, Karim Faez, and Amin Asghari, A fast and accurate iris recognition method using the complex inversion map and 2dpca, ICIS, IEEE, 2008, pp. 179–184.

We used an intensity threshold method with Canny edge detector to extract the rough region of the pupil. For the outer boundary a median filter with prewitt compass edge detector were used to localize the rough region of the outer boundary. By selecting the bottom point of the pupil (which is not usually occluded by the eyelids and eyelashes) as a reference point, two sets of intersecting points between the horizontal lines and pupil's inner and outer boundaries were created. Each point set was map into a new complex domain using the complex inversion map function and the best-fitting line was found on the range. Exact inner and outer boundaries of the iris were found by remapping the best-fitting lines to original domain

2.2 Bradford Bonney, Robert Ives, Delores Etter, and Yingzi Du, Iris pattern extraction using bit planes and standard deviations, SSC, vol. 1, IEEE, 2004, pp. 582–586.

. Through binary morphology applied to the bit-plane, the pupillary boundary of the iris is determined. The limbic boundary is identified by evaluating the standard deviation of the image intensity along the vertical and horizontal axes. Because our extraction approach restricts localization techniques to evaluating only bitplanes and standard deviations, iris pattern extraction is not dependent on circular edge detection. This allows for an expanded functionality of iris identification technology by no longer requiring a frontal view, which leads to the potential for off-angle iris recognition technology.

2.1.3. John Daugman, Statistical richness of visual phase information: update on recognizing persons by iris patterns, IJCV 45 (2001), no. 1, 25–38.

Algorithms first described in 1993 for recognizing persons by their iris patterns have now been tested in several public field trials, producing no false matches in several million comparison tests. The underlying recognition principle is the failure of a test of statistical independence on texture phase structure as encoded by multi-scale quadrature wavelets

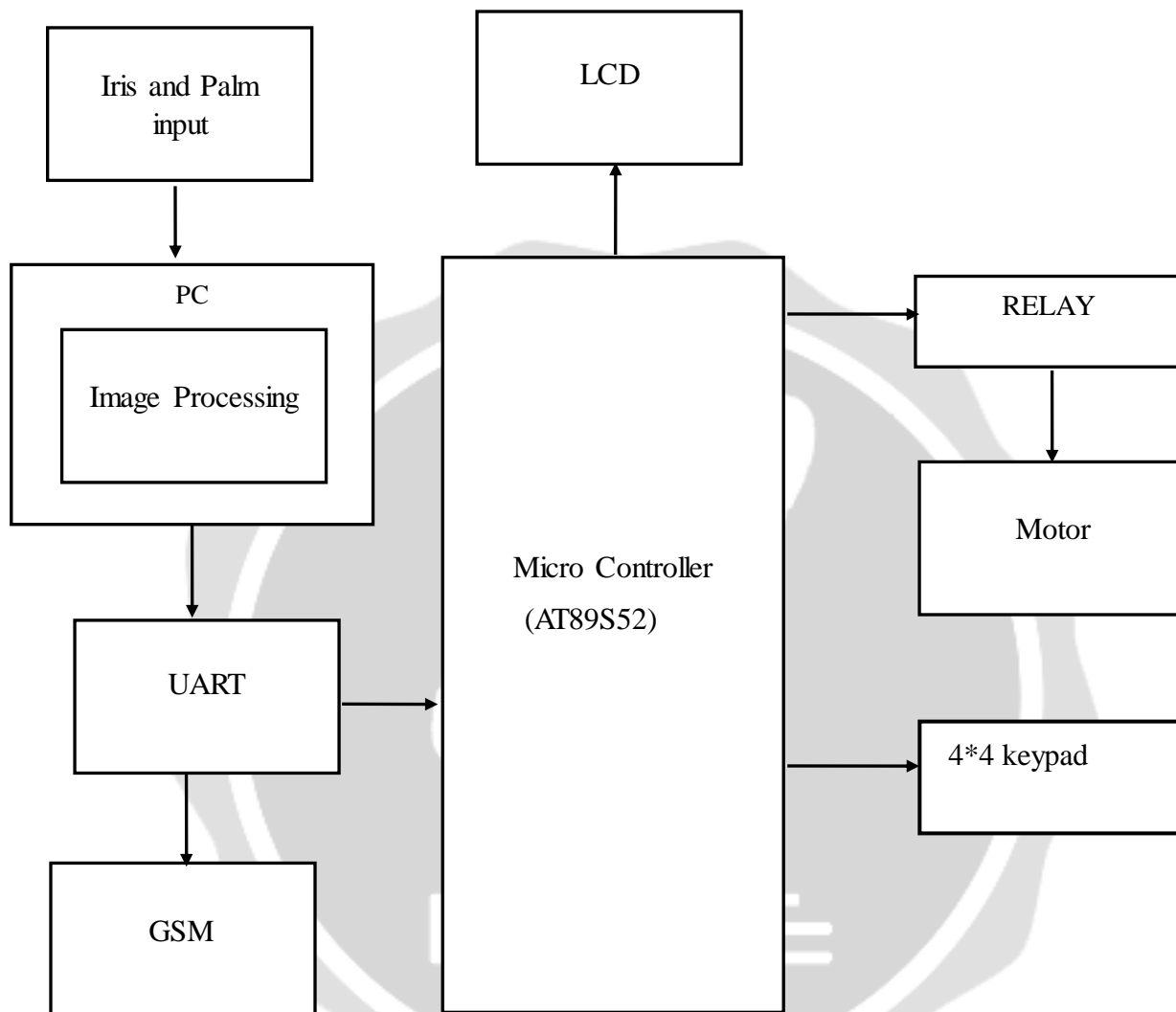
3. PROPOSED SYSTEM:

The purpose of our project is to make a secure ATM system. Here we also added Mat-lab technology to prevent theft process by using palm scanner and Iris scanner inside ATM, with help of image processing we recognize the original image. Here user can get OTP from the ATM machine after enter the OTP that money transactions its possibles. If anymore other person enter into room that ATM system will get automatically lock.

ADVANTAGES OF PROPOSED SYSTEM:

- This methods can resist offline dictionary attacks without smart-card
- Avoided ATM security related issues.
- Prevents ATM from unauthorized users
- Here security efficiency high.

5.BLOCK DIAGRAM :



6.SEGMENTATION

Iris segmentation has become a major research topic to image processing specialist, because it involves different processes which are critical in the iris recognition system. During the acquisition of the iris image various factors such as light intensity, eyelashes and eyelid hinder accurate and faster segmentation process. The iris segmentation begins with finding an iris in an image, demarcating its inner and outer boundary at the pupil and sclera, detecting the upper and lower eyelid boundaries if they occlude. Inaccuracy in detection, modelling and representation of these boundaries: eyelashes, pupil and eyelid can cause different mappings of this iris pattern in its extraction description; such differences could cause failure to match. The quality of the image is obtained for the recognition process affects the quality of iris segmentation. In this paper we are going to discuss about some of the methods used for the segmentation of iris and have to conclude the best method that will give us more accuracy in segmentation.

7.PARTIAL DIFFERENTIAL EQUATION

In mathematics, a partial differential equation (PDE) is a differential equation that contains unknown multivariable functions and their partial derivatives. (A special case are ordinary differential equations (ODEs), which deal with functions of a single variable and their derivatives.) PDEs are used to formulate problems involving functions of several variables, and are either solved by hand, or used to create a relevant computer model.

A partial differential equation (PDE) for the function $u(x_1, \dots, x_n)$ is an equation of the form

$$f\left(x_1, \dots, x_n, u, \frac{\partial u}{\partial x_1}, \dots, \frac{\partial u}{\partial x_n}, \frac{\partial^2 u}{\partial x_1 \partial x_1}, \dots, \frac{\partial^2 u}{\partial x_1 \partial x_n}, \dots\right) = 0.$$

where n is an integer. The derivative of u with respect to y approaches 0 uniformly in x as n increases, but the solution is

$$u(x, y) = \frac{\sinh(ny) \sin(nx)}{n^2}.$$

FIGURE 1

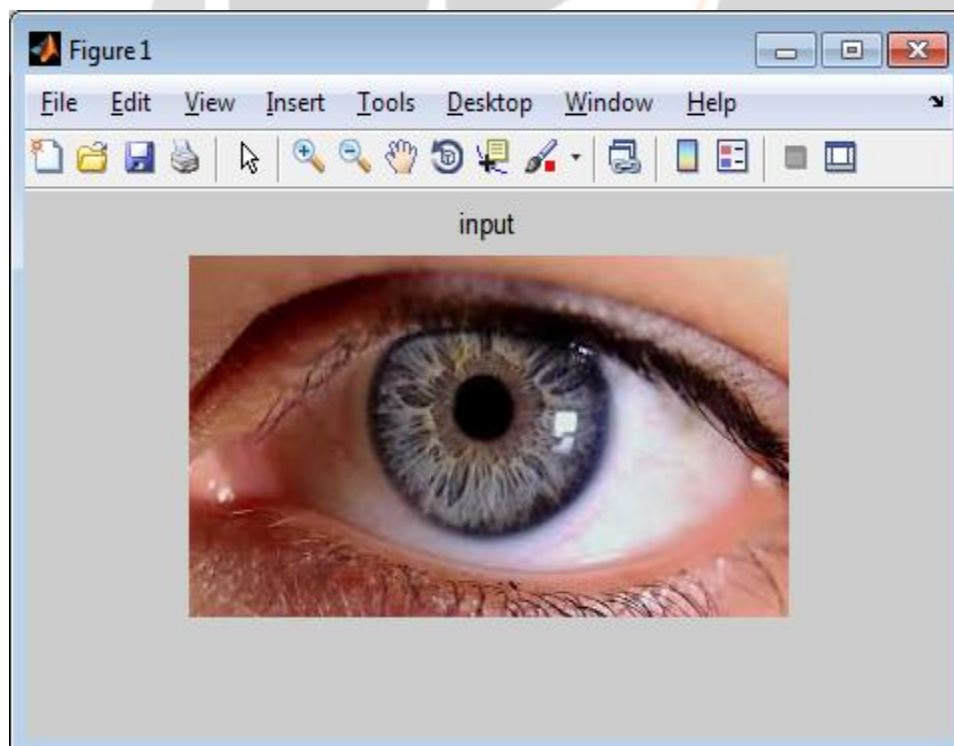


FIGURE 2

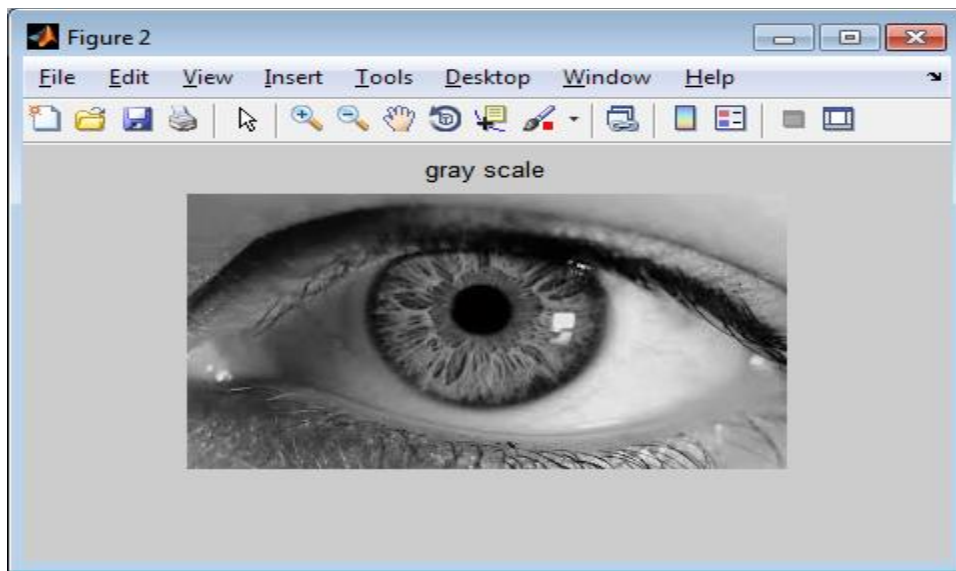


FIGURE 3

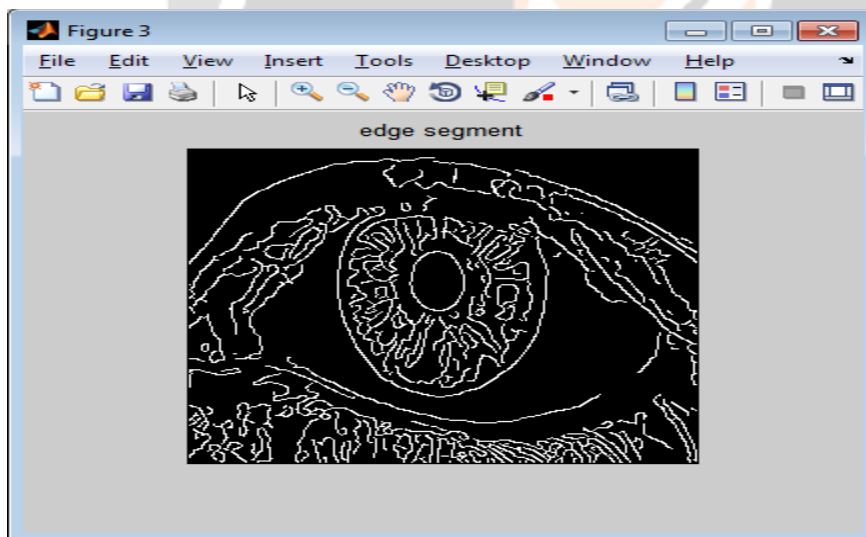
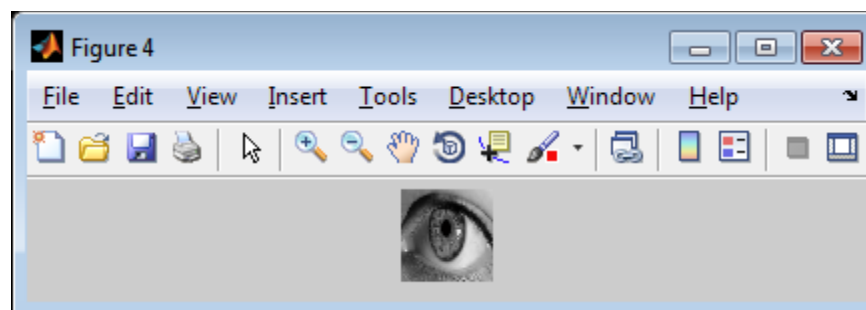


FIGURE 4



8.CONCLUSION

Initially, in order to improve and facilitate later processing, a primary processing is performed on iris images. In pre-processing stage, Canny edge detection is used to enhance iris outer boundary that is not recognized well in normal conditions, and a multiplier function is used to enhance Canny iris points, also image contrast adjustment is performed to make its pixels brighter.

9.REFERENCE

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