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Designing a system for identifying persons using 3d images

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Abstract

Nowadays, information security has become a very important and difficult matter. Security cameras are widespread in banks, ATMs, airports, universities, offices, and anywhere with a security system. The face recognition process is one of the most demanding image analysis and computer vision tasks. Faces are biometric systems that utilized a digital image of a person to identify or authenticate that person. This system is employed in the field of security. The face recognition system is required to detect and recognize the face in the image automatically. It works by extracting and then recognizing its attributes, irrespective of expression or illumination, transitions (translation, rotation and scaling of the image) and ageing, which is a difficult task. The proposed system records the facial features of the person standing in front of the camera, such as the size, position of the nose, eyes, jawbones, and cheekbones structure. This program also allows the user to evaluate and analyze the image. This system does not require long training for technicians because it is easy to use and gives quick and accurate results compared to biometric techniques the other. It is worth noting that Matlab roll was used in the design of this program.

Keywords: Biometric techniques, Automated Teller Machines (ATMS), Facial Recognition (FR)

1. Introduction

Face recognition systems have been in use for more than 50 years. Facial recognition technology is the one of the research that deals with identifying area patterns and computer vision, for use

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in many fields, including biometrics[8, 5], surveillance system, information security, access control, cards Smart, law enforcement. Florida was the first to recognize and use this app on a large scale [12, 4].

In latest years, many biometric-based techniques have been adopted to identify people rather than allowing people to access Smart cards, plastic cards, tokens [1, 2], and keys are used to create physical and virtual domains, etc., passwords and PINs.[7]. These techniques look at physiological and/or behavioral traits of an individual to determine and/or confirm his or identification [2, 3]. Cards, codes, Passwords and PINs can be difficult to remember and stolen or guessed, and magnetic cards can be broken and obscured. A biological characteristic, on the other hand, cannot be misplaced, [4] forgotten, stolen, or fabricated. Many elements must be considered in order to design an effective and practical face recognition system. The system's overall speed for [11, 10] detection and recognition must be appropriate, and the accuracy must be high [2, 3].

2. Face recognition method

Face recognition is accomplished using the methods listed below

(i) Methods of Holistic Matching.
(ii) Methods based on features (structural).
(iii) Hybrid approaches.

3. Propose system

In the proposed system, three-dimensional images were adopted in order to solve the problem of facial recognition more accurately, as it uses the areas of roll and the effect of the face, as well as the use of features that cannot change over time.

The image of the person in front of the camera can be verified by comparing it to the images stored in the storage sites, as shown in the following Figure(1).

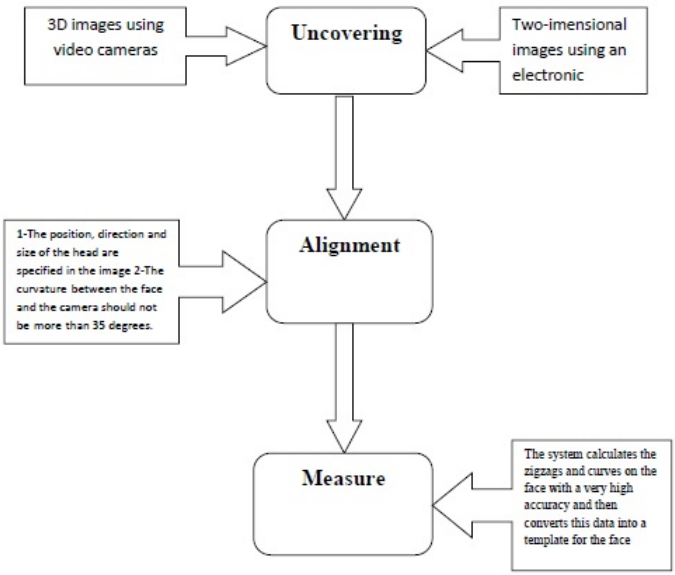
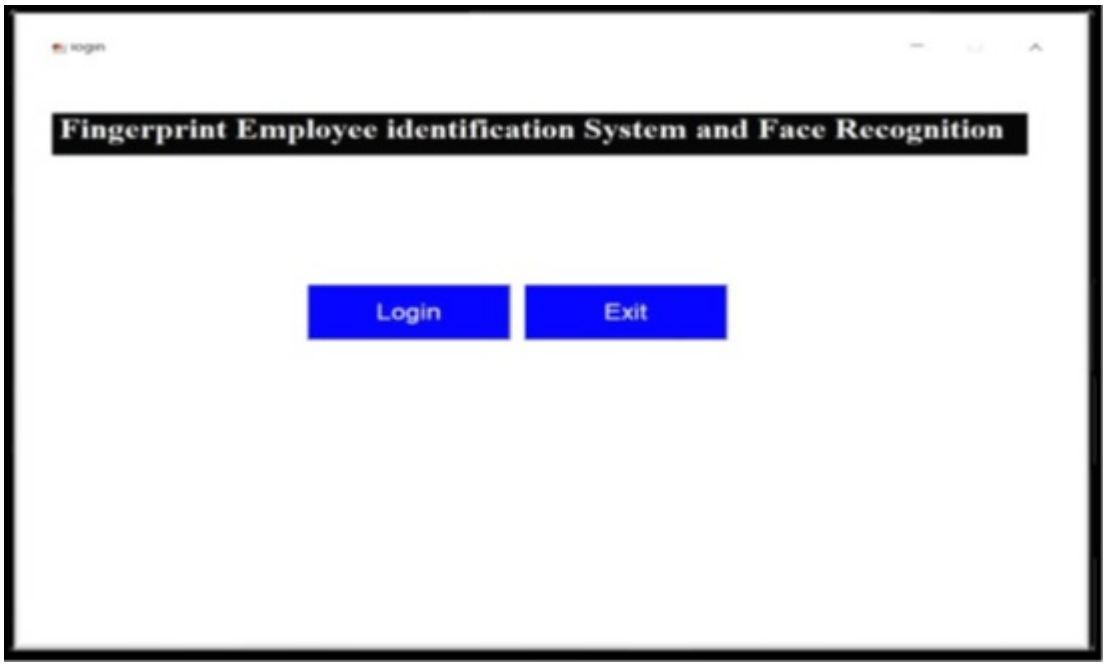


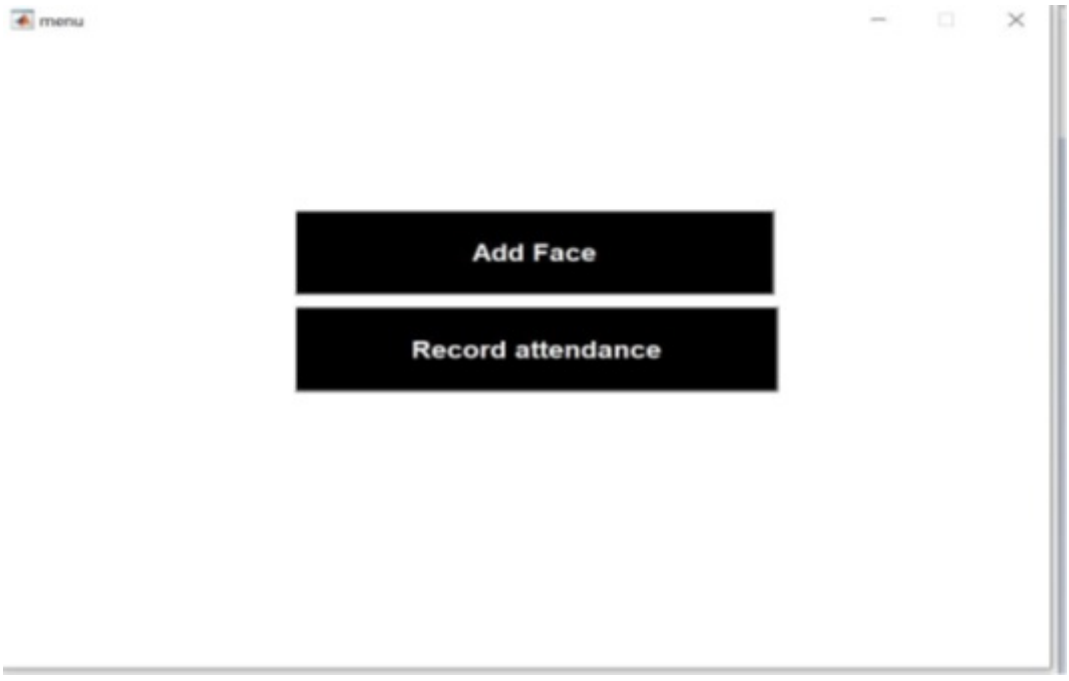
Figure 1: Proposed system steps

4. Design and implementation:

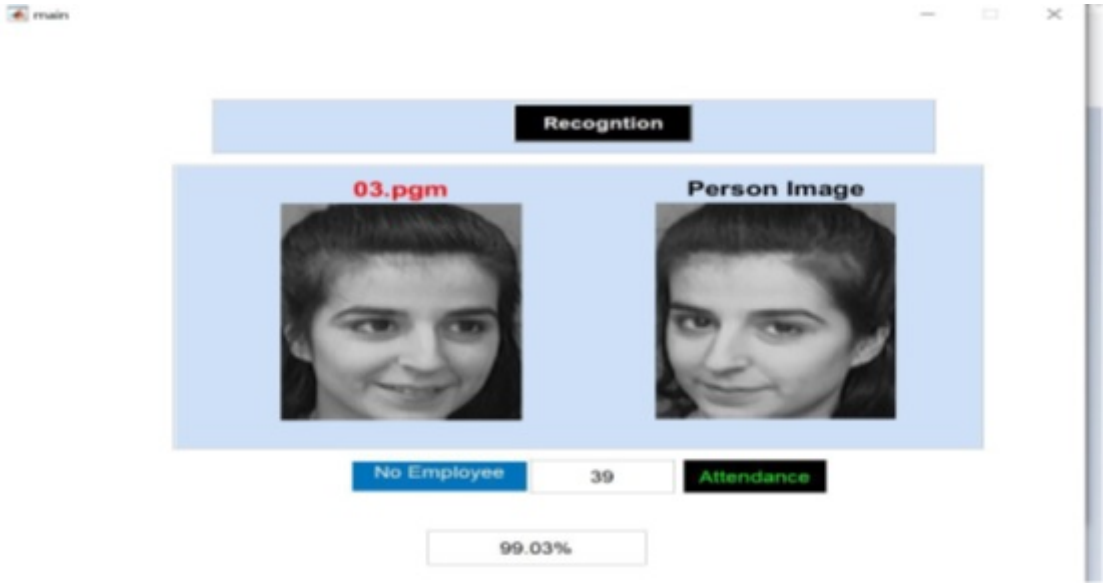
(i) After implementing the project, the window for identifying faces appearsas shown in the following image.



(ii) After login to system show the window mean menu as in the following image:



(iii) when we chose image employee and recognition work will retrieve image employee and record attendance as the following image.



5. Conclusions and Recommendations

Facial recognition research, in our opinion, will be a fascinating subject for many years to, keeping many scientists and engineers occupied.In the proposed system, three-dimensional images were adopted in order to solve the problem of facial recognition more accurately, as it uses the areas of roll and the effect of the face, as well as the use of features that cannot change over time.
Therefore, this system gives better results than those techniques that are affected by the physiological changes that occur to the person over time.
The readers will gain a better understanding of face recognition methods and applications after reading this paper. Face recognition in 2D and 3D, as well as large-scale applications, such as digital driver licenses, Face recognition is a difficult problem in e-commerce, student ID, or even national ID, and the field is open to more research.Will be important in the future.

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