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IRIS RECOGNITION BASED DOOR LOCKING AND GSM BASED SECURITY SYSTEM

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Abstract:

The aim of the paper is to investigate a cost effective solution that will provide controlling of doors r and will also enable home security against intrusion. The motivation of the project is to facilitate the users to automate their home locking by IRIS recognition. Only authorize people can enter the house automatically by iris recognition. Unauthorized people cannot enter the house and SMS indication that gives alert to the house owner. The system provides availability due to development of a low cost system. Home security has been a major issue where crime is increasing and everybody wants to take proper measures to prevent intrusion. In addition there was a need to automate home so that user can take advantage of the technological advancement in such a way that a person getting off the office does not get melted with the hot climate. Therefore this paper proposes a system that allows user can get message from owners and also provide security .camera used here is to identify the unknown person by using image processing.

Keywords — IRIS recognition, ELM, Machine Learning, Neural Networks.

I. INTRODUCTION

Biometrics is a means of using parts of the human body as a kind of permanent password. Just like our fingerprints are unlike those of any other person, your eyes, ears, hands, voice, and face are also unique. Technology has advanced to the point where computer systems can record and recognize the patterns, hand shapes, ear lobe contours, and a host of other physical characteristics. Using biometrics, devices can be enabled with the ability to instantly verify identity and deny access to everybody else.Using biometrics for identifying and authenticating human beings offers unique advantages over traditional methods. Tokens, such as smart cards, magnetic stripe cards, and physical keys can be lost, stolen, or duplicated. Passwords can be forgotten, shared, or unintentionally observed by someone. Forgotten passwords and lost smart cards are a problem for users. In biometrics the concerned person himself is the password, as biometrics authentication is based on the identification of an intrinsic part of a human being.The biometrics technique can be integrated into applications that require security, access control, and identification or verification of users. Biometrically secured resources effectively eliminate risks, while at the same time offering a high level of security.

2. LITERATURE REVIEW.

Qijun Zhao et al. [1] proposed an adaptive pore model for fingerprint pore extraction. Sweat pores have been recently employed for automated fingerprint recognition, in which the pores are usually extracted by using a

computationally expensive skeletonization method or a unitary scale isotropic pore model. In this paper, however, author shows that real pores are not always isotropic. To accurately and robustly extract pores, they propose an adaptive anisotropic pore model, whose parameters are adjusted adaptively according to the fingerprint ridge direction and period.

Moheb R. et al. [2] proposed an approach to image extraction and accurate skin detection from web pages. This paper proposes a system to extract images from web pages and then detect the skin color regions of these images. As part of the proposed system, using BandObject control, they build a Tool bar named “Filter Tool Bar (FTB)” by modifying the Pavel Zolnikov implementation. In the proposed system, they introduce three new methods for extracting images from the web pages (after loading the web page by using the proposed FTB, before loading the web page physically from the local host, and before loading the web page from any server).

3. MACHINE LEARNING

Machine learning (ML) is the study of computer algorithms that improve automatically through experience. It is seen as a subset of artificial intelligence. Machine learning algorithms build a model based on sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to do so. Machine learning algorithms are used in a wide variety of applications, such as email filtering and computer vision, where it is difficult or unfeasible to develop conventional algorithms to perform the needed tasks.

A subset of machine learning is closely related to computational statistics, which focuses on making predictions using computers; but not all machine learning is statistical learning. The study of mathematical optimization delivers methods, theory and application domains to the field of machine learning. Data mining is a related field of study, focusing on exploratory data analysis through unsupervised learning. In its application across business problems, machine learning is also referred to as predictive analytics.

4.MODULES

A.PREPROCESSING

Image pre-processing is the name for operations on Iris images at the lowest level of abstraction whose aim is an improvement of the Iris data that suppress undesired distortions or enhances some image features important for further processing. ... Its methods use the considerable redundancy in Iris images Here we implemented HOG based pre-processing technique

B.FEAUTURE EXTRACTION

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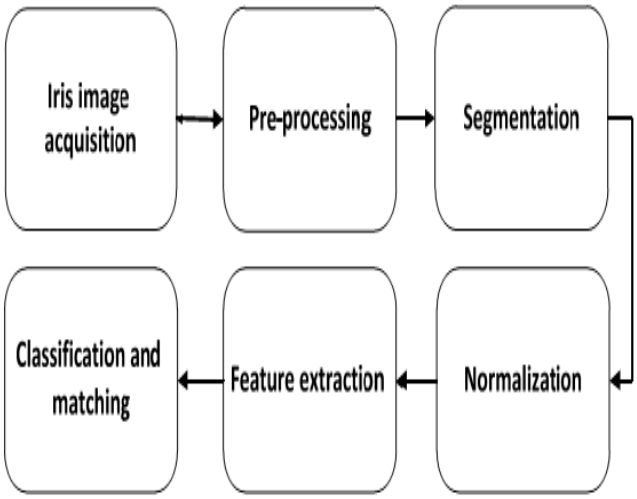
Feature extraction involves reducing the number of resources required to describe a large set of data. Feature extraction is a general term for methods of constructing combinations of the variables to get around these problems while still describing the Iris data with sufficient accuracy. Here we implemented K-means Cluster technique



C.SEGMENTATION

In digital image processing and computer vision, image segmentation is the process of partitioning a digital image into multiple segments (sets of pixels, also known as image objects). Image segmentation is typically used to locate objects and boundaries (lines, curves, etc.) in images.

D.CLASSIFICATION

ELM classification is a process to analyze the number of data sets and extracts the meaning of data. Support vector machine provides methods and techniques for transformation of the data into useful information for decision making. **With accuracy of 98%.**These techniques can make process fast and take less time to predict the Glaucoma with more accuracy. The healthcare sector assembles enormous quantity of healthcare data which cannot be mined to uncover hidden information for effectual decision making. It becomes more influential in case of Glaucoma that is considered as the predominant reason behind death all over the world. In medical field, Data Mining provides various techniques and has been widely used in clinical decision support systems that are useful for predicting and diagnosis of various diseases.

4. EXISTING SYSTEM

- Existing iris recognition systems are heavily dependent on specific conditions, such as the distance of image acquisition and the stop-and-stare environment, which require significant user cooperation.

- In environments where user cooperation is not guaranteed, prevailing segmentation schemes of the iris region are confronted with many problems, such as heavy occlusion of eyelashes, invalid off-axis rotations, motion blurs, and non-regular reflections in the eye area.

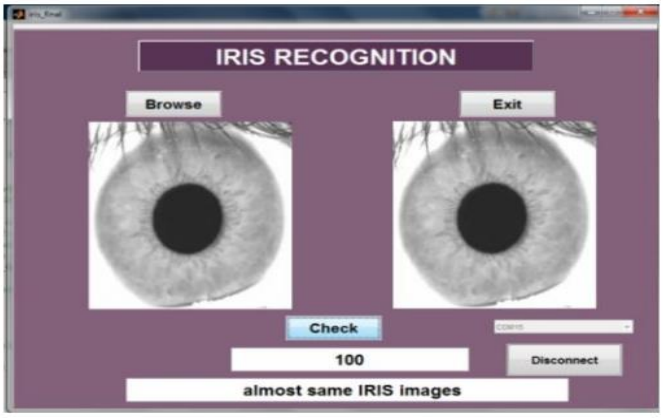
- Neural network based technique used for Iris recognition which gives the poor detection rate and computational time may high..

5. PROPOSED SYSTEM

Considering a large number of Iris examination items, only parts of these items are included. Specifically, two types of Iris examination data are involved. F-MNCS and ABR are selected on account of the lower data dimension but a larger amount. The traditional machine learning algorithm using Iris data based on small-scale data set has been adopted to carry out the related researches on the clinical application.

Meanwhile, two data sets are established after data cleaning. Furthermore, detailed comparisons and discussions are conducted on processed results of four algorithms, including the effect comparison in the cases with and without data standardization. The traditional machine learning algorithm is better than the DL method in the Iris data. The dimension would have a great impact on the model with small-scale data set. It can be predicted that with the increase of the data set size, the model accuracy without standardization would be promoted. It also provide a significant reference for the diagnosis based on clinical data and the improvement of medical efficiency.

6. RESULTS



7. CONCLUSION

Iris image classification aims to group iris images into multiple categories according to their application related attributes (e.g. liveness, ethnicity, texture category) rather than their identity information. Because iris image classification is a significantly different problem to iris image recognition in terms of definition, challenges, core problems, and applications, specific iris image analysis and pattern classification approaches are needed for iris image classification. Iris image classification is an important research topic in iris biometrics but it is not well addressed in the literature. Moreover, the existing research efforts are separated in specific application problems of iris image classification. In this research work iris image classification is firstly formulated as a generic problem in iris biometrics. Such a formulation is beneficial to unify the research efforts in iris liveness detection, race classification, coarse iris image classification for efficient identification, etc. Moreover, it is possible to develop a fuzzy based technique iris image classification module in an iris recognition system for a number of applications.

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