Foot Print Health Monitoring System Based On Open Cv

J.Rathikhashree, M.Reji

Abstract : Human footprint is considered has the latest traits that could be used to detect an individual's identity computes parameters. The main objective is to establish the ability of image processing algorithms on a small computing platform. We designed the embedded system which reads and recognizes a person their identity. The major aim of the paper briefs the characteristics of Patient's data, requirements and Report behind implementing a real-time base system. The person's foot image is segmented and its key points are located. The foot is aligned and edited, cropped as per the key points and is developed and resized. These methods are used for recognizing and subdividing. Color place a major role in multiple application for footprint detection. This project is focused on lightweight technique were mainly used due to the drawback of real time based applications and Raspberry Pi capabilities.

Keywords: Raspberry pi, automated biometric feature from finger print, persons identification.

I. INTRODUCTION

In this era human identification and authentication, numerous biometric ideas and techniques emerge from different perspectives. In automated biometrics-based identification, many elastic methods are being developed that uses various biometric traits of person: permanence and uniqueness. This domain is becoming a new emerging alternative to access control in wellness domains. The biometrics features resultant from fingerprints faces, palm print, irises, retinas, and a variety of other characteristics. These technologies are now used in a wide range of application, such as law enforcement, social welfare, banking, and various security purposes.For unconstrained subjects automated biometrics based identification have not been developed for practical methods. The major problem in automatic personal detection is how to clarify the sampled method against the registered feature with high reliability. Some systems utilizes the basic biometric method for detecting fingerprints and iris.

II. EXISTING SYSTEM

A foot print cannot be used for large scale high security system. And also it is difficult to take foot images every time are many biometrics like finger print, hand geometry, face recognition, iris recognition, signature verification, DNA testing, speaker recognition etc.. for building access because removing of shoes and cleaning legs for removing

dirt and then placing leg for recognition is really time consuming.The exciting technic which is related to this topic are the following.

- Face sensor
- Face recognition
- Shadow sensor
- Iris
- Finger print
- Hand shaking
- Signature
- Speak

Varies methods are used to collect the information and to detect the medical reports of a patient .This technology are also encryption, security and investigation purpose. We choose for footprint in order to detect the data of the patient plus we are going to store the data for future purpose. In these method we will detect the image of the foot print based on the RGB technique and we will calculate edge detection of an image.

III. APPLICATION:

In case of emergency patient can retire the information from the cloud. There might be chance of losing a data so in order to overcome that we can go for cloud data.

IV. ALOGRITHM:

1. Input image
2. Convert image into RGB
3. Image segmentation
4. Edge detection
5. Feature extraction
6. Convert into Binary number
7. Display in the screen

V. WORKING PRINCIPLE

A new technique is found using manual foot measures for accurate human identification. The methods used in this techniques are image processing, feature extraction and pattern recognition. A major requirement for this technique includes a high definition image of the foot instead a poor quality image. The abstract of the foot features are found by determining the centre the foot by measuring between the centre and outer points of the toes. The geometric structure of the foot is generated by the resulted angle and the distance between the two points. The center point for each toe is found by the length between the center and bottom most part of the foot.

This has been by many peoples successfully. Then in pre-processing several steps results feature extraction. The final step is to eliminate noise and improve the features by processing the extracted features which will be used in further processes like Gray Scale Conversion, Image Resizing, Image Enhancement, Binarization, and Edge Extraction in an image and Morphological operations. Thus it recognizes the gap between two toes. The two features extracted from the foot are can also be compared by hamming distance method to determine whether it is from different person or same one. To proceeds this method we need to measure how many bits are same between two patterns based on that we can decide it is from same person or not.

VI. SYSTEM ARCHITECTURE:

Fig: Architecture

The classification of system architecture is

1. Camera
2. Cam connector
3. Raspberry Pi
4. SD Card

SD card:
It's a device which is used to store the data.
Memory for the raspberry pi

CAM connecter:
Cam connecter is basically pulk port with clubs the device.

System Architecture:
- This device splits into three parts which are as follows
- Scans the foot with high definition camera
- Converts analog data into digital form.
- Displays the output.

Raspberry pi:
- The proposed system are monitored using model B+ are the following parameters are mentioned below.
- It has the Broadcom BCM2835 soc processor with 700MHZ ARM 1176JzF s core
- 512MB random access memory.
- It supports the video core of 4gpu and resolution of 1920*1200 the modulus of can resist up to 5 MP camera and HD video

@30tps.It also consist of eternal port 10/100mbps.
- Microsd card slot HDMIaudio, video, jack, GPIO, header, micro USB power port, DISI ports, USB 2.0 ports.
- Buck is of Dual step down power supply ranges from 3.3V-1.8V.

In order to get the data of a patient we are scanning the foot using high definition camera, we consider the imagine as HD because the clarity of a imagine defines the accuracy of a footprint information. The accumulated imagine is sent to cam converter. The function of this device is to turn the imagine from analog to digital form HDMI cable works as an interface and expansion between CAM, raspberry pi and camera.The major scope of the lead is, it can utilize widely available cables and increases the range as well. Because of the following reason we go for HDMI cable rather than a flat ribbon moreover remaining pins are used to add required pins with efficient low consumption energy and camera is merged with it. Each pi model are executed in this system .it recognizes the mid-point on the foot by calculating the outer region of toes and mid of foot. The method was executed on a bunch of people and the results was positive. Raspberry pi is developed by this technique. Basically raspberry pi can be attached or can be plugged into monitor, television mouse and keyboard, it has low expense which is designed in the size of debit. Any device can be controlled, monitoring by developing python code. It is used in displaying HD videos plus mostly in the field of digitals projects. We are going to implement this project using Linux operating system by installing OpenCV software. All the conditions are aligned and imported into OpenCV software operated by python. Thus from the imagine of a scanned foot the data's are accumulated and stored in SD card which indeed acts as an memory storage and the output is displayed in monitor.

VII: BLOCK DIAGRAM FOR PROPSED WORK:

Variables need to create a dielectric substance (FR4 is the dielectric substance).
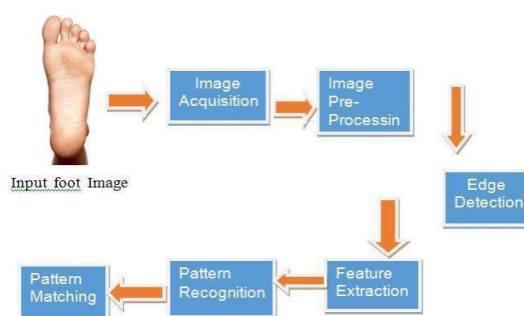
1. Image acquisition:

- It is nothing but related to digital image processing which reuses the data from the particular source
- For the processing hardware based source is used.
- These is the initial

stage which is followed as a sequence "Without an image no processing is done".

2. Image pre-processing:

- It is a way of modifying image into digital form and functions on it.
- An image is used to get the information and to improve the quality of the image.

At the end results can be modified based on the analysed image

3. Edge detection:

It's the method which is used to detect an object based on the boundaries. It is also utilize for image segmentation and Image extraction in the field of dip.

4. Pattern recognition:

It's the method of combining input information based on the object which depends on parameters.

5. Pattern matching:

It's a process for searching areas of an image that is identical to the template.

VIII: PROPOSED WORK

OPEN CV:

- It is a machine learning software which is abbreviated as open source computer vision.
- It was developed to deliver a basic fundamental for computer vision application, mostly used for the prospective of commercial projects which is based on the machine learning.
- It is licensed as a BSD product and it's comfortable to modulate and operate.

PYTHON:

The perception of computer is a area of various discipline that bothers about how the system can figure out high level knowledge from digital images and video .This methodology is developed in order to computerized the task so that human visual can perform. The following techniques are acquiring, processing, analysing, and understanding digital image and pulls out high dimensional data from real word

IX: OUTPUT:
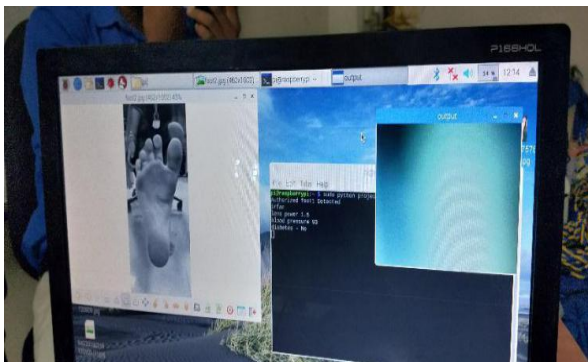
X: CONCLUSION AND FUTURE SCOPE

This method is used to measure the uniqueness of the person using foot biometric health care service. The main aim of developing monitoring system is to reduce the cost of health care by avoiding physical office visits, hospitalizations, and diagnostic testing procedure. The honesty of this system will improve the trust among patients. When threshold value is reaches, the alarm system that consists of buzzer and LED alerts the doctors to treat the patient treat accordingly. These project is not only for health monitoring system it can also be used for other fields as well for instance in medical, investigation etc. we have taken a small initiative to store a medical data of patient and to utilize to for future purpose.

FUTURE WORK:

Future work will focus on better understanding of the error cases, further improving the model and also reducing model size and reducing CPU requirements. We will also look into ways of improving the currently extremely long training times, e.g. variations of our curriculum learning with smaller batch sizes and offline as well as online positive and negative mining.

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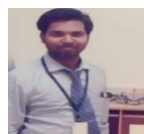
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