A Review on Identification of Plam-Print Using RLBP Techniques & Transform Domain

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Abstract- *Biometric are unique, reliable and stable physical or behavioral characteristics that can be effectively used for personal identification. Because of these characteristics these systems can provide a higher level of accuracy in security systems. Iris, fingerprint, speech, face, retina, hand geometry, and palm print are most used biometric for personal identification. Palm print has several advantages in comparison with other biometrics, which make it suitable for identification; The available approaches for palm print identification can be divided into three categories primarily on the basic of extracted features: Texture-based approaches, line-based approaches, appearance-based approaches. to obtain palm print images is the foundation of personal identification. Three kinds of images can be acquired from inked palm, scanned and digital camera. Though all of them are used to verify individuals, the inked images are seldom used for personal identification, while images acquired from digital camera become common used for online palm print acquisition.*

Keywords- palm print images, digital camera, acquisition, LBP, TDT

I. INTRODUCTION

To obtain palmprint images is the foundation of personal identification. Three kinds of images can be acquired from inked palm, scanned and digital camera. Though all of them are used to verify individuals, the inked images are seldom used for personal identification, while images acquired from digital camera become common used for online palmprint acquisition. The palmprint capture device contains a lighting source to provide uniform lighting condition during image capturing. For the reason of aging source and unsmooth of inner palm, the images captured can be various between one and another. To overcome this shortage, intensity adjustment is a technique for ensuring the images have the uniform intensity distribution mostly, and it can also Stretch the contrast of images which contributes more accuracy to palmprint identification. Comparing with traditional identification methods, biometric identification has two advantages: the first one is that biometric features can't be stolen or lost; the second one is that biometric features nearly can't be copied

Different holistic methods such as Principal Component Analysis (PCA), Linear Discriminate Analysis (LDA), and the more recent 2D PCA have been studied widely but lately also local descriptors have gained attention due to their robustness to challenges such as pose and illumination changes. This paper presents a novel descriptor based on local binary pattern texture features. In Local Feature Analysis, kernels of local spatial support are used to extract information about local facial componentsSpatial domain techniques viz., Principal Component Analysis (PCA), Independent Component Analysis (ICA), Singular Value Decomposition (SVD).

Transform domain techniques where in the biometric data from spatial domain is converted to transform domain viz., Fast Fourier Transform (FFT), Discrete Cosine Transform (DCT), Discrete Wavelet Transform (DWT), Dual Tree Complex Wavelet Transform (DTCWT) etc.

In this proposed method by using novel edge-texture features, Discriminative Robust LBP (DRLBP). The proposed features solve the issues of LBP, LTP and RLBP. They alleviate the intensity reversal problem of object and background. Furthermore, DRLBP discriminates local structures that RLBP misrepresent. In addition, the proposed features retain the contrast information of image patterns. They contain both edge and texture information which is desirable for object recognition. We present comprehensive experimental results on 4 people data sets by taking their palm images. Results indicate that the proposed features outperform LBP, LTP and RLBP and perform better than other approaches in comparison on data sets

II. SYSTEM DESIGN

An image is array or matrix of square pixels (picture elements) which are arranged in columns and rows. In a (8-bit) grey scale image each pixel has an assigned intensity. A grey

scale image is a black and white image, but its name indicate that gray image includes many shades of grey.

Types of digital images

a) Black and white images

A black and white image is made up of pixels each of which holds a single number corresponding to the gray level of the image at a particular location. These gray levels span the full range from black to white in a series of very fine steps, normally 256 different grays. Since the eye can barely distinguish about 200 different gray levels, this is enough to give the illusion of a step less tonal scale as illustrated below. Assuming 256 gray levels, each black and white pixel can be stored in a single byte (8 bits) of memory.

Fig:- Shaded Variation

b) Indexedcolorimage

Some colour images are created using a limited palette of colours, typically 256 different colours. These images are referred to as indexed colour images because the data for each pixel consists of a palette index indicating which of the colours in the palette applies to that pixel. There are several problems with using indexed colour to represent photographic images. First, if the image contains more different colours than are in the palette, techniques such as dithering must be applied to represent the missing colours and this degrades the image. Second, combining two indexed colour images that use different palettes or even retouching part of a single indexed colour image creates problems because of the limited number of available colours.

III. IMAGE ENHANCEMENT

By using filter noise can be removed and then we can get enhanced image. It is important to keep in mind that enhancement is a very subjective area of image processing. The principal objective of image enhancement is to modify attributes of an image to make it more suitable for a given task and a specific observer. Enhancement In figure the basic processing of image enhancement is explained. The steps are as follows.

IV. ROBUST LOCAL BINARY PATTERN (RLBP)

The descriptor local binary pattern is used to compare all the pixels including the center pixel with the neighboring pixels in the kernel to improve the robustness against the illumination variation. An LBP code for a neighborhood is produced by multiplying the threshold values with weights given to the corresponding pixels and summing up the result. The histogram of Robust LBP is generated after Upper and lower robust LBP codes are weighed using gradient vector. RLBP is represented by set of normalized histogram bin. This local texture feature is used to discriminate the local edge texture of palmprint invariant to changes of contrast and shape.

The gradient is detected from input image to determine the histogram of local binary pattern. Robust and discriminative features are determined, which involves two descriptors i.e. gradient magnitude and orientation.

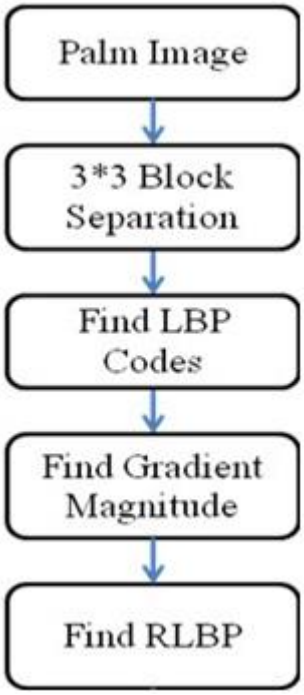

Fig.3.8 RLBP Flow

IV. CONCLUSION

The implementation of palmprint biometric security system based on discrete wavelet transform (DWT) and robust local binary pattern (RLBP). Palm is the inner surface of a hand between the wrist and the fingers. Palm has principal lines, wrinkles and ridges. Palmprint Identification gives more security as the palm of each individual is different from others. Palmprint Identification using transform domain and RLBP techniques are used intending to get high security while

accessing banking or personal details. The robust local binary pattern is used for different object texture and edge contour feature extraction process. This approach is used to identify the illumination changes, intensity distributions characteristics. Then matching is done between test input and database samples using Euclidean distance metrics. These features are useful to distinguish the maximum number of samples accurately

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