The International Journal Of Engineering And Science (IJES)
|| Volume || 5 || Issue || 6 || Pages || PP -37-39 || 2016 ||
ISSN (e): 2319 – 1813 ISSN (p): 2319 – 1805

Detection and Rectification of Distorted Palm Print Images

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----------ABSTRACT----------
Distorted or obscure Palm Print Images is one of the major reasons for false non-match. Due to false non-match this problem affects all Palm Print recognition applications this problem mainly affects in negative recognition applications, many users purposely distorted their palm print avoid identification. here in this paper novel algorithms is to used to detect and rectify sin distorted based on a single palm print image. Here we don't use novel algorithm directly rather than this novel algorithm Gaussian blur algorithm is used for distortion of palm print images. Palm Prints are used as the feature vector and a SVM classifier is used to classify the palm print images. Finally the rectification of distorted images will be implemented. Where the input is a distorted palm print and the output is the distortion field. To detect this distorted or obscure palm print image problem a database of various distorted reference palm prints are used. Input palm print is found in the reference database and the respective distortion field is used to convert the input palm print into a normal form.
Keywords: *Distortion of palm Prints, SVM classifier, and Distortion detection*

Date of Submission: 10 June 2016 Date of Accepted: 27 June 2016

I. INTRODUCTION

Palm print is the inner part of the person's hand. Compare to now a day it is very essential from centuries, the palm line patterns have popularly believed to be able to predict a person's future. Palm print contains unique character for each individual and it is universe. Generally we compare palm print and finger print techniques both are different. Finger print identification is most nature and automatic finger print identification is based on finger print detail, but palm print contains much more information than finger print. Palm print contains some important characteristics, i. Palm print and finger print basic elements are same. Therefore Palm print are unique character compare to finger print and will not change in life. Due to this they are impossible to fake. II. Palm print is much larger than finger print, so details can be easily obtained from this character.

Palm print recognition is used so many fields in real time such as civil applications, law enforcement etc.Palm print contains so many features like principal lines features, delta point features and geometric features. Basically we know principle lines are namely heart line, head line and life line. Detection of palm print is to identify the distorted palm print image and to detect that distorted or obscure [impure image]. For the first most step in this paper is to collect the palm print database. Distorted and Normal separate folder will be created respectively. after randomly we select 100 pictures from original database.

Then 100 pictures save it in normal image folder and corresponding another set of 100 pictures save it in distorted image folder. For further identification and distortion normal and distorted image will be identify zero by normal and one by distorted images. In this paper mainly we used novel algorithm to detect and rectify skin distorted it's based on a single palm print image. Here one important concept is directly we can't use novel algorithm based on this algorithm Gaussian blur algorithm is to used for distorted images. Features will be extracted by the HOG vector it is extracting histogram of gradient orientation features. These features will be used then for classification and image recognition. SVM classifier is trained to perform the classification task. Further step is testing for testing select last 20 images from normal and distorted palm print images. After feature extraction and classification process completed we get a tested data set. Once we get the tested data set next process is rectification it is a process of refinement or purification of a images or conversion of distorted image into normal image. Where input is a distorted palm print image and the output is the distortion field. To solve this problem used database of various distorted reference palm prints. Corresponding distortion field is built in the offline stage. Input palm print is found in the database and the corresponding distortion field is used to transform the input palm print into normal one.

II. PROPOSED MODEL

The Proposed scheme was explained at two levels, Palm level and subject level. In Palm level, we explained the performance of distinguishing between natural and changed palm prints. At the subject level, we explained the performance of differentiate between the subjects with natural or original normal palm prints and those

compare with the altered palm prints. The proposed model is simple to use and understand .The architecture is shown in the following block model in fig -1:

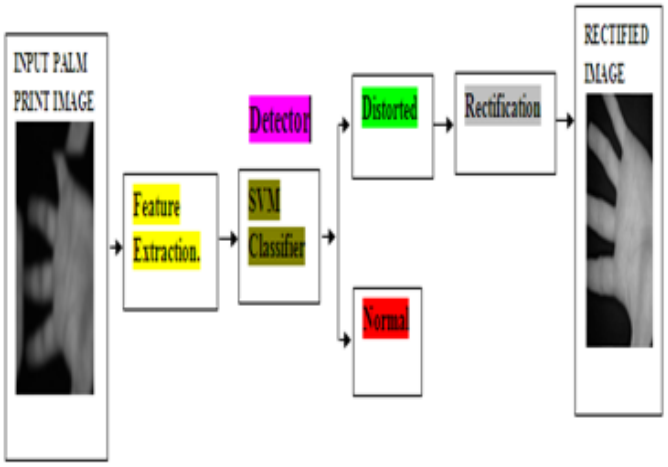

Fig-1: Proposed model for Palm Print images

III. MOTIVATION

Most of Indian population is situated in villages and there are labours in fields and because of the field work the Palmprint becomes partially visible and sometime totally not visible.

Palmprint Classes	Classification Accuracy
Class I	67
Class II	69
Class III	78
Class IV	82
Class V	81
Class VI	89.5

IV. EXPERIMENTAL RESULTS

The experimental results are reported in terms of correctly searched Palm images over the number of all Palm images in the available datasets. A total of 500 images were validated by creating the dataset contains 70 subjects, including 55 male and 15 female, respectively. Each person has 6 different classes. Classification accuracy for Class I, II, III, IV, V and VI are 67%, 69, 78, 82, 81, 89.5 respectively.

Here, Class VI provides good accuracy rather than other classes and it shows more accurate than contemporary methods.

V. CONCLUSION

In this paper, we introduced the correlation between Table I: Shows the classification accuracy of different Palm print image classes. Palm print verification algorithm using SVM classifier. Based on the experimentation, a feature extraction and detector matching scheme by exploiting the accuracy between the two codes was proposed. The experimental results on the public database showed that by keeping the consistent orientation features, the Palmprint verification accuracy could be high and Palm Prints are used as the feature vector and a SVM classifier is used to classify the palm print images. Finally the rectification of distorted images will be implemented

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