

Enhanced Palm Vein Recognition Algorithm with Equalizer Technique

B.Kiran Bala

Abstract: All over the world there are so many security technology and innovation developed every day by day but enhancing the existing techniques which give more robust to the existing users for that purpose this paper mainly deals with the palm vein recognition technique which gives more security to the present technology and for this system we have taken IDIAP database has been used for this entire process and initially equalize the image is the important key feature for this proposed technology and then feature extraction take place in the next process like edge and texture extraction and then finally make the comparison with the existing database finally make the palm vein recognition as more security in the present technology.

Index Terms: Equalizer, Edge, Palm vein, Feature extraction.

I. INTRODUCTION

The system has palm vein as input image and make process the input image has 256 x 256 as preprocessed image taken as input to the system[1-3].

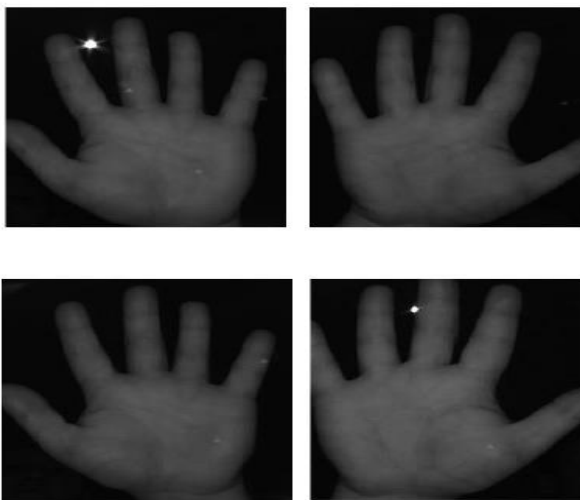


Fig.1. Sample Input palm vein image

From the above palm vein input image process the entire proposed system through the sample images and pre process technique carried output and then equalizer technique process

for the preprocess images and then make the feature extraction for the equalized images as the proposed system has feature extraction like edge and texture to extract the feature and make the database to be match for the authentication process[4-6].

II. METHODS AND MATERIALS

The proposed system has palm vein has the input image and preprocessing will be take place after that equalize the image with the proposed algorithm and then extract the features like edge and texture using proposed algorithm. the Fig 2. shows the architecture diagram for the entire proposed system[7-9].

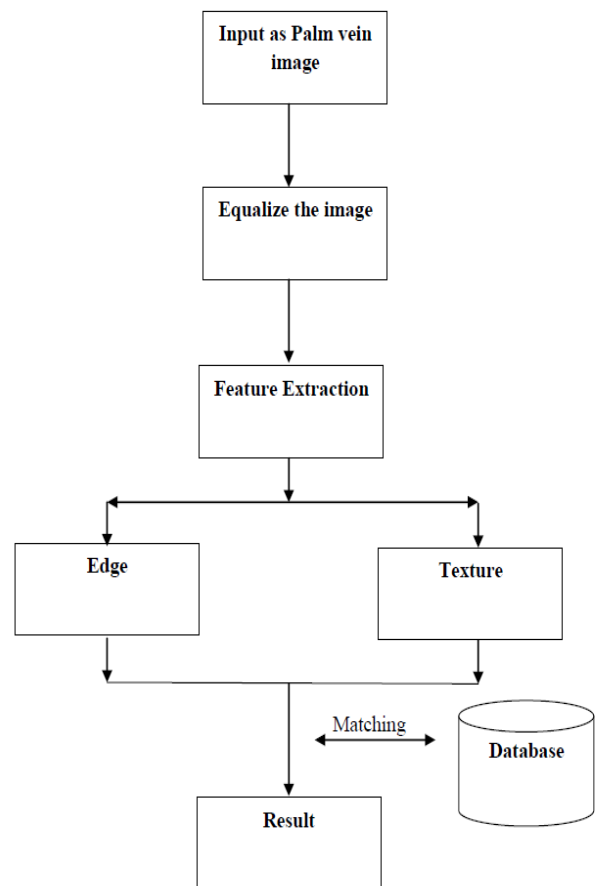


Fig 2: Architecture Diagram for the proposed system

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The equalized image conversion has been taken place by using the KNN algorithm from the input preprocessed image.

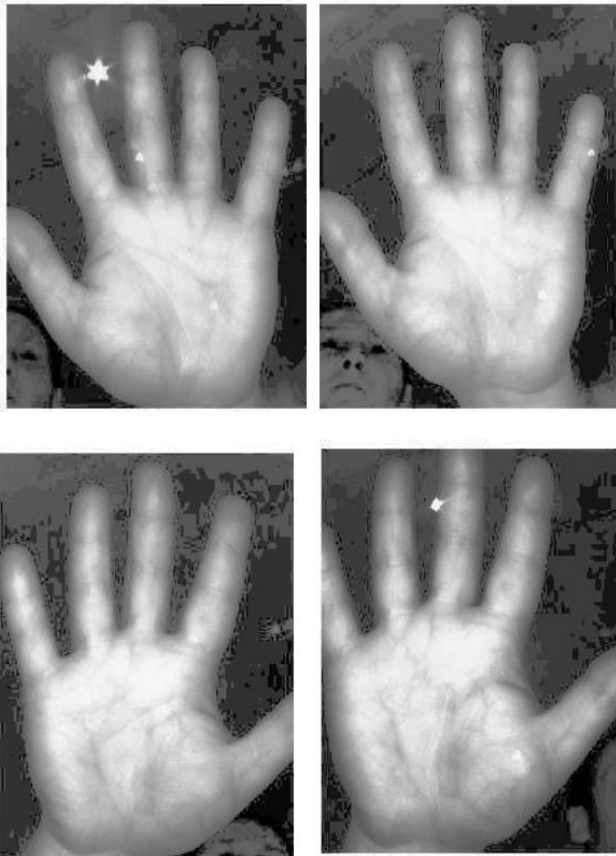


Fig 3: Equalized Image after processing the input image

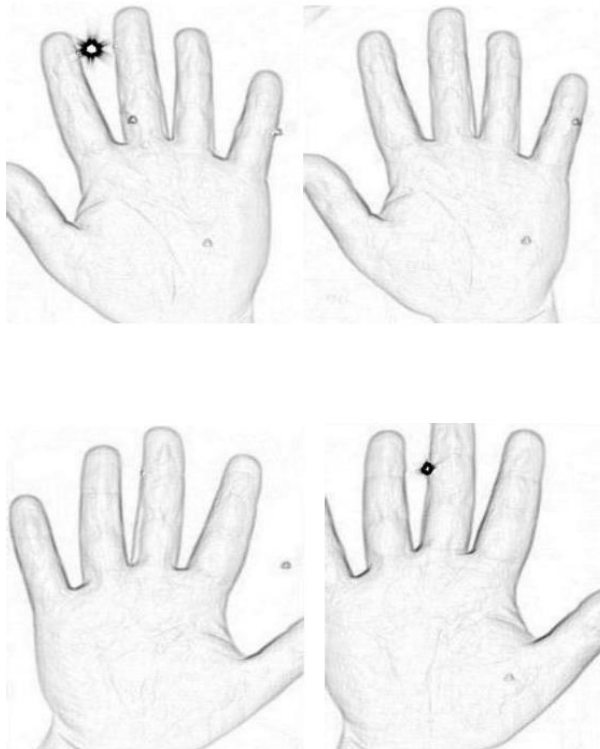


Fig 4: Edge Detected Image from the proposed system

After the equalized image process over next move to the feature extraction technique for the proposed algorithm and edge detection sobel algorithm has been used to detect the edge for the entire process and texture also made extracted by the proposed algorithm and finally make the comparison for the data with database.

III. IMPLEMENTATION

In this system from IDIAP database used for the palm vein recognition totally 52 left palm and 52 right palm image has been used with image size of 256 x 256 palm vein image. Fig 4. shows the edge detection output from the proposed algorithm and the texture extraction also made and store in the database finally make the matching technique with euclidean distance metrics algorithm for matching process and FAR & FRR will be place a major role in the efficiency calculation for the justification of the results[10].

Table1: FAR & FRR result in %

S.No	Input mage	FAR	FRR
1.	Left Hand	98.08	96.15
2.	Right Hand	96.15	98.08

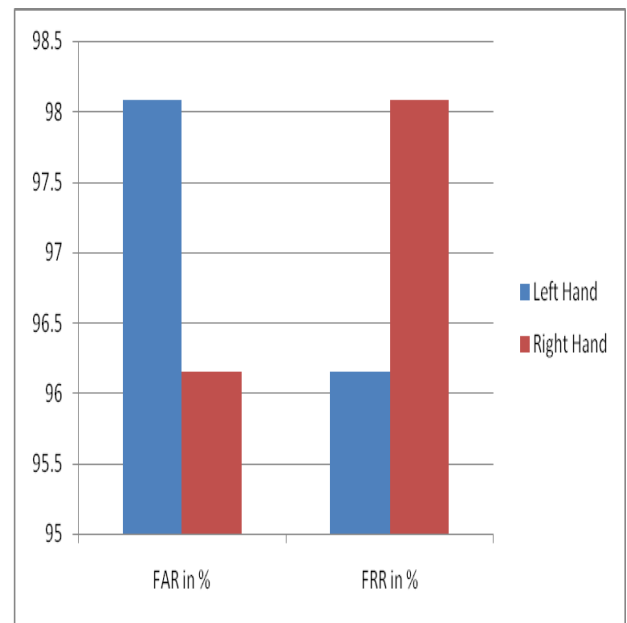


Fig 5: Graph for FAR & FRR

IV. CONCLUSION

The system has the unique technique to equalize the image for the proposed system then followed with the equalized process then feature extraction take place for edge and texture very important aspects in this proposed system and make the database matching with the existing system for the best authentication for the better result.

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B.Kiran Bala Working as Assistant Professor in K.Ramarkrishnan College of Engineering, Trichy, Tamil Nadu, India. He is having 8 years experience in image processing research work and published 25 papers in these research areas.