MODIFICATION IN FKP

Vivek Raghav[1], Tejender Singh Chandrawat[2], Amandeep[3], Mridul Rawat[4]

[1,2,3,4] *Department of Computer & Science Engineering, Dronacharya Group of Institutions, Greater Noida, Uttar Pradesh, (India)*

ABSTRACT

This paper proposed the use of multi-instance feature level fusion as to improve the performance of (FKP) verification. A log-Gabor filter has been used to extract the image local orientation information, & represent the FKP features. Experiments are performed by using the FKP database, which contain 7,920 images which gives the result, multi-instance verification approach out-performs higher performance than using any single instance. The influence on bio-metric performance using feature level fusion under different fusion rules have been de-monstrate in the paper.

I. INTRODUCTION

Thedemand or use of user authentication techniques has been increasednow days, about security & rapid advancements in networking, communication& mobility. Applications require verification schemes to confirm the identity of an individual requesting their service. Normally authentication methods using passwords & ID cards are used to restrict access to a variety of systems.

However these systems are vulner-able to attack& security can be easily breached, the bio-metrics technologies is replacing this methods as it has addressed the problems that plague these systems. Bio-metric refers to the automatic recognition of user based on their physiological & be-havioral characteristics. Bio-metric systems has 2 categories:

2.1 Physiological Biometrics

Physiological bi-ometrics [fingerprint, iris, retina, h& geometry, face, etc] use measurements from the human body.

2.2 Behavioural Biometrics

Behavioural bio-metrics (signature, keystrokes, voice, etc) use dynamics measurements based on human actions. These system are based on pattern recognition methodology, which follows the acquisition of the bio-metric data by building a bio-metric feature set, & comparing versus a pre-stored template pattern. These are uni-modal which rely on the evidence of a single source of information for authentication, which have to contend with a variety of problems such as, noise in sensed data, intra-class variations, & inter-class similarities, etc. It is now

apparent that a single bio-metric is not sufficient to meet the variety of requirements imposed by several large scale authentication systems.

II. EXPERIMENTS ON FKP

1. An experiment was made on FKP which is recognition scheme by extracting & assembling local & global features of FKP images. The conducted on FKP database de-monstrate that the proposed local– global information combination scheme could significantly improve the recognition accuracy obtained by either local or global information are lead to promising performance of an FKP based personal authentication system, it also indicate that the proposed scheme could achieve much better performance.
2. **2nd Experiment-** multi-instance en-rollment for face recognition as a means to improve the performance of 3D face recognition. It shows that using multiple images to en-roll a person in a gallery can improve the over-all performance of a bio-metric system. This demonstrated that when using multiple images to en-roll a person, sampling from different expressions improves performance over sampling only the same expression.
3. **3rd Experiment-** A Fusion of 2 instances of the same semantic, where semantics are alternative hand-written contents such as numbers or sentences. To fuse two instances of one semantic, a bio-metric authentication is carried out on both by Bio-metric Hash algorithm up to matching score computation. The Fusion is carried out by the combination of the matching scores of 2 instances of one hand-written semantic.

III. TECHNIQUE

3.1 Pre-Processing

This describe the Region of Interest extraction, the process involved to extract Region of Interest for each instance is as follows, it is necessary & critical to align FKP images by adaptively constructing a local co-ordinate system for each image. With such a co-ordinate system, anRegion of Interest can be cropped from the original image using the following steps suggested in, as shown.

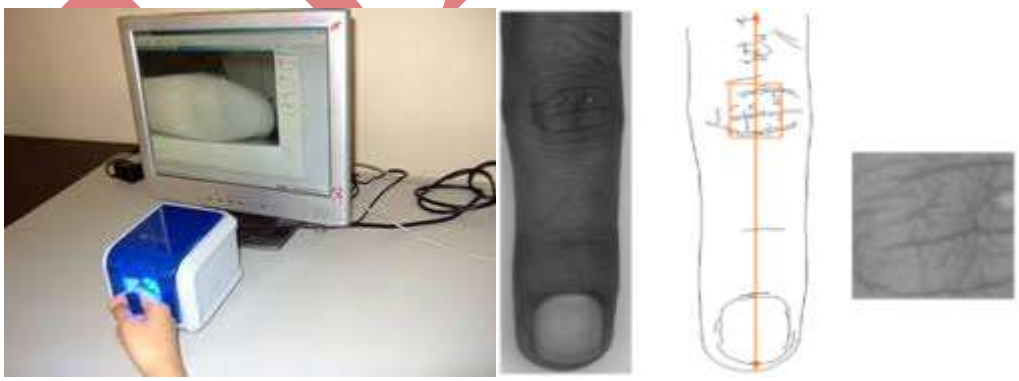

Fig-1: Image acquisition device is being used to collect FKP samples &ROI coordinate system, where the rectangle indicates the area.

3.2 Feature Extraction

The Log Gabor has been used as feature extraction algorithm, it overcomes some of traditional dis-advantages found in Gabor filters. Log-Gabor filters basically consist of logarithmic transformation of the Gabor domain which eliminates the annoying DC component that is allocated in medium & high-pass filters.

The response generated by the Log-Gabor is Gaussian,when it is viewed in frequency scale it appears linear. This captures more information of high frequency areas & also exhibits the characteristics of high pass filters.

IV. CONCLUSION

Analysing the FKP images as a bio-metric has been done. 2 matching score normalization techniques experimentally evaluated to improve the performance fusions of different instances. The results of evaluation represented by means of system performance. This concluded that a multi-instance bio-metric fusion is given better performance than single instances. This shows that using multiple instance of bio-metric which collected using single sensor, can have the security level. However, from the degree of improvement in accuracy by fusing multiple instances is marginal. Since different instance of the same instance produces the re-dundant features.

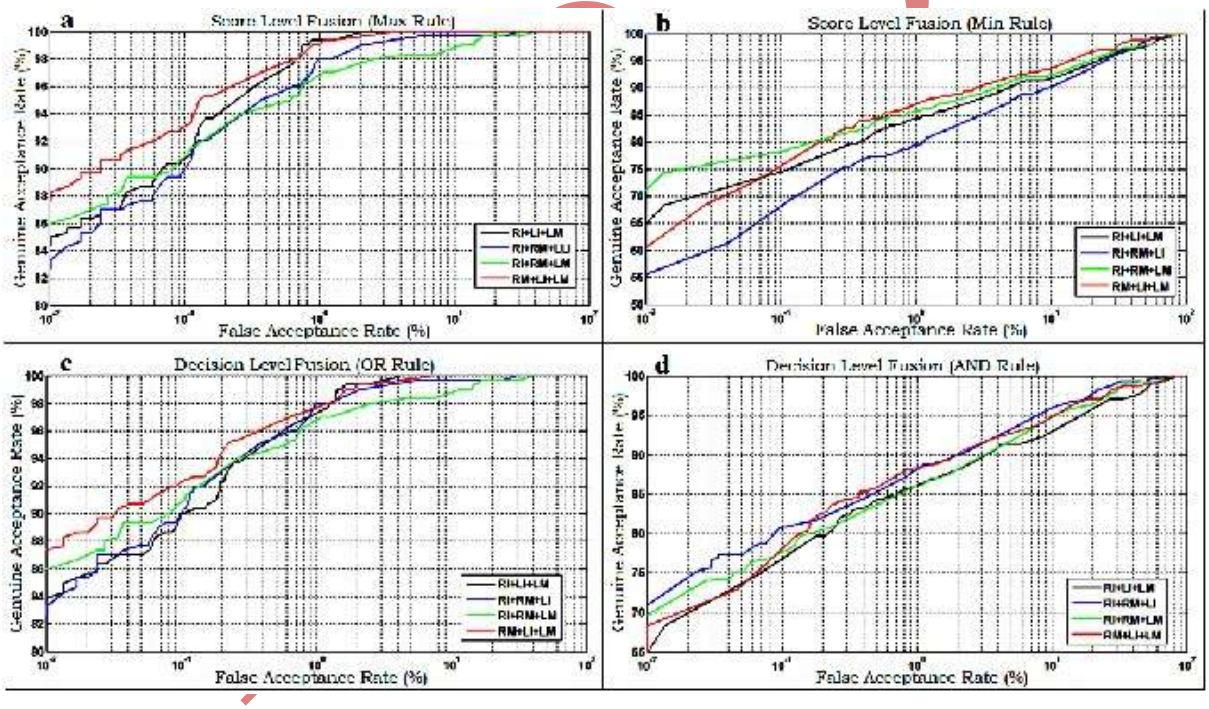

Fig-2: The ROC Curve Feature Level Fusion Combination of Two Instances With Different Normalization Rules

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