Abstract

In biometric security system still fingerprint authentication is a challenging task for the altered and compressed images. Apart from the Automatic Fingerprint Identification System (AFIS), the altered, blurred and compressed images are still having quality issues. This paper presents an efficient multi-model biometric system based on multiple fingerprint images which includes altered fingerprint images also. The system utilizes fingerprint scanner to simultaneously collect fingerprints of multiple fingers on a hand in one image. The collected multi-finger images are first segmented to get individual fingers. Quality of each individual finger is analyzed and its minutiae points are extracted. The minutiae points of each finger is extracted from multiple fingerprint images and compared with the corresponding individual finger of the input
fingerprint image to get matching score of that finger. Matching score between two or more fingerprint images is obtained by fusing matching scores of various fingers along with their respective image quality and relative accuracies. Prediction of genuine user or impostor user is based on the fused matching score.

References

- Xinjian Chen, Jie Tian and Xin Yang, "A New Algorithm for Distorted Fingerprints Matching Based on Normalized Fuzzy Similarity Measure," in IEEE Transactions on
Index Terms

Computer Science
Image Processing

Keywords
Fingerprint  Altered Images  Fusion  Image Quality.