Abstract

This paper proposes a bimodal biometric system for person identification using two traits, hand geometry and palm texture. The proposed system uses complete hand images to find hand geometry and palm texture features. Unlike other multimodal biometric systems, the user does not have to undergo the inconvenience of using two different sensors as both biometrics can be taken from the same image. Palm texture is presented using transform features and hand geometry features are represented as distances between different boundary points. The final decision is made by fusion at decision level in which feature vector are created independently for query image and then compared with the enrollment templates which are stored during database preparation for each biometric trait. This system is tested on the database collected at our institute for 100 people. The Genuine Acceptance Rate (GAR) of the system for fusion is found to be 99.5%. Rotation of hand by 10 degrees gives %GAR 98.5%. Equal Error Rate (EER) achieved is 1.11.

References
A Single Sensor Hand Geometry and Palm Texture Fusion for Person Identification

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Index Terms

Computer Science Pattern Recognition
Keywords

Biometric Identification  Feature Fusion  Hand Geometry  Multimodal Biometric  Palmprint Identification