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FUSION OF PALMPRINT AND HAND GEOMETRY BIOMETRICS FOR USER IDENTIFICATION

M. P. DALE, HIREN J. GALIYAWALA AND M. A. JOSHI

Abstract

Multi-modal biometric systems capture two or more biometric samples and use fusion to combine their analysis to produce a better match decision by simultaneously decreasing the False Acceptance Rate (FAR) and False Rejection Rate (FRR). Information from multiple sources can be consolidated in several distinct levels, including the feature extraction level, match score level and decision level. In this paper, palm-print and hand-geometry are combined for person identity verification. Unlike other multimodal biometric systems, two biometric can be taken from the same image. This method attempts to improve the performance of palm-print-based verification system by integrating hand geometry feature. The proposed system consists of four major blocks: Image acquisition module, image pre-processing block, feature extraction and identification. Integrating of palm and hand geometry features at decision level has given recognition rate of 100% at lower training set. Also it can be seen that Equal Error Rate (EER) has been considerably reduced on integration.

Keywords: Biometric Identification, Multi-modal biometric, Hand Geometry, Palmprint Identification, Feature fusion.