Abstract

This paper proposes a biometric person verification system based using hand images. This paper attempts to improve the performance of palm print-based verification system by integrating hand geometry features at different levels of fusion. In this work geometrical features such as finger lengths and finger widths are used. For extraction of the palm print features Gabor filter based approach is utilized. For matching, the newly acquired biometric samples are compared with those stored in the system database, at the enrolment stage. Unlike other bimodal biometric systems, the users do not have to undergo the inconvenience of using two different sensors since the palm print and hand geometry features can be acquired from the same image, using single capturing device at the same time. The capturing device has a resolution of 640X480 pixels. Our experimental results on the image dataset from 300 users confirm the utility of combining hand geometry features with those from palm prints using a simple image acquisition setup. It also illustrates the performance of different fusion methods such as decision level, score level. FAR of 0.28% and FRR of 2.0% is achieved for the database using score level fusion of palm geometry and palm print.
Person Verification using Fusion of Palm Geometry and Palm Print

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Index Terms
Keywords
Palm geometry  Palm print  Multi-Biometrics  Fusion