Abstract

Biometric based person identity verification is gaining more and more attention. Several studies have shown that multimodal biometric identification systems improve the recognition accuracy and reliability compared with recognition using a single biometric. The present paper introduces a new personal identification framework that is based on the fusion of face and fingerprint biometrics. The proposed framework overcomes the limitations of face recognition systems as well as fingerprint verification systems. The gray-level co-occurrence matrix and the minutiae extraction are used to represent the features of face and fingerprint image respectively. This framework uses the correlation coefficient as a similarity measure to retrieve the closest face and the corresponding fingerprint images with a query image. Experimental results performed on a given database of face and fingerprint images show that the proposed framework improved greatly the security and recognition rate.
A Personal Identification Framework based on Facial Image and Fingerprint Fusion Biometric


- Shahin MK, Badawi AM, Rasmly ME, &quot;A Multimodal Hand Vein, Hand Geometry and Fingerprint Prototype Design for High Security Biometrics&quot;, Cairo International Biomedical Engineering Conference (CIBEC), Pages 1-6, 18-20 Dec. 2008
- Gargouri Ben Ayed, Masmoudi A. D and Masmoudi D. S, &quot;A New Human Identification Based on Fusion Fingerprints and Faces Biometrics Using LBP and GWN Descriptors&quot;, 8th International Multi-Conference on Systems, Signals and Devices (SSD), Pages 1 – 7, 2011
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Keywords

Personal identification  Facial image  Fingerprint  Gray-level co-occurrence matrix
Minutiae feature extraction
Correlation coefficient

Index Terms

Computer Science  Pattern Recognition