Abstract

Multimodal fusion for biometrics recognition system had gained specific attention nowadays thanks to its remarkable valuable results. For this approach, classification methods have been the basis of important recognition accuracy improvements. The artificial neural networks (ANN) and support vector machines (SVM) belong to this class of methods. This paper presents comparison concerning the performances of some methods that have been successfully applied to the fusion of scores for multimodal biometric recognition. After recognizing each single modality which was the fingerprint, the face as well as the voice, we recovered three similarity scores. These scores are then introduced into the classification system based on neural networks and on support vector machine techniques. Experimental results demonstrate that the identity established by such an integrated system is more reliable than the established identity by fingerprint recognition system, facial verification system and a voice verification system. Fusion phases are performed at score level. An average rate (= 57.69 %) is obtained by fusion with ANN. While fusion with the SVM gives an average rate equal to (= 63.31 %). A brief introduction is provided regarding the commonly used biometrics, including face, fingerprint
and voice. Comparing Merger methods is made according to criteria of optimization of error rate.

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Index Terms

Computer Science  Security

Keywords
Multimodal biometric system, Voice, Fingerprint, Face, Recognition, Score-level, Fusion, ANN, SVM..