Remote Multimodal Biometric Identification Based on the Fusion of the Iris and the Fingerprint

Abstract—

With the development of various services through the Web and especially with the emergence of electronic commerce, all suppliers of products and services are providing considerable efforts to secure against all possible fraudulent intrusions. It appears that biometrics is the only method that can satisfy the requirements of remote identity in terms of relevance and reliability. In this paper, we propose a client-server network architecture for a remote multimodal biometric identification. As a matter of fact, we use two modalities, namely, the human iris and his fingerprint in order to strengthen the security, since the unimodal biometric systems cannot always be used reliably to perform recognition. However, the association of the information presented by the various modalities may allow a precise recognition of the identity. Concerning the fusion of these two modalities, we used a new approach at the scores level based on a classification method by the decision tree and a combination method by the sum. The results obtained confirm that the proposed method helped significantly to optimize the performance of the identification.