Abstract: A Multimodal Fusion Algorithm Based on FRR and FAR Using SVM

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Abstract

Remarkable improvements in recognition can be achieved through multibiometric fusion. Among various fusion techniques, score level fusion is the most frequently used in multibiometric system. Already existing score level fusion approaches can be categorized into three classes: transformation-based, density-based and classifier-based. In this paper, advantages and disadvantages of the three fusion techniques are analyzed. And then we propose a novel fusion algorithm based on False Reject Rate (FRR), and False Accept Rate (FAR) using Support Vector Machine (SVM). It transfers scores into corresponding FRR and FAR, thus avoiding calculate posteriori probability of a certain score, as well as be capable of illustrating distribution of matching scores. The proposed method takes full advantages of both capabilities of FRR and FAR to describe the order of score, and classification of SVM. Experimental results show that the proposed method outperforms several representative approaches and can effectively improve the performance of multibiometric system.

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