ERROR HANDLING IN MULTIMODAL BIOMETRIC SYSTEMS USING RELIABILITY MEASURES (ThuPmOR6)

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Abstract :

In this paper, we present a framework for predicting and correcting classification decision errors based on modality reliability measures in a multimodal biometric system, and apply it to multimodal biometric verification. In our experiments we use face and speech classifiers nested in our recently proposed Bayesian network framework. For each modality, automatic quality measures are proposed, which play an important role in the process of classification error handling within each modality, before the final verification decision is arrived at. The unimodal expert decisions and the accompanying information on their reliability are combined in a decision module that produces the final verification decision. The proposed system is consequently shown to yield higher decision accuracy than the corresponding unimodal systems.

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