Robust Facial Data Recognition using Multimodal Fusion Features in Multi-Variant Face Acquisition

Abstract

Biometric use physiological traits such as fingerprints, face and behavioral traits such as voice, hand signatures characteristics to verify an individual's identity. The two processes involved in biometrics are verification and identification. Verification process is performed by matching an individual's biometric with the template of claimed identity only. The identification process performed by matching an individual's biometric with template of every identity in the database. Existing work presented a multimodal (2D and 3D) face recognition algorithm by way of performing hybrid matching which was based on both feature and holistic metrics. The Pose of 3D face and its texture corrected using single automatically detected point and hotelling transform. 3D Spherical Face Representation (SFR) is used in conjunction with Scale-Invariant Feature Transform (SIFT) descriptor which results in formation of a rejection classifier. It quickly eliminates a large number of candidate faces at an early stage for efficient recognition for known faces as attributes. Our proposed work presented a Feature Based Multimodality Face Recognition System to recognize the human individuals in environment of known faces using features like shape of the eyes, nose and jaw. Case study and preliminary experimental results conducted in Mat lab proves to be a viable approach using multimodality method based on 2D and 3D facial representation for known faces. Facial recognition rate is measured in terms of validation index generated for false acceptance rate,
false rejection rate.

References


Index Terms

Computer Science
Pattern Recognition
Keywords
Biometrics  face recognition  spherical face representation  SIFT  ICP