Abstract

A wide variety of systems require reliable personal recognition schemes to either confirm or determine the identity of an individual requesting their services. The purpose of such schemes is to ensure that the rendered services are accessed only by a legitimate user, and not anyone else. It is widely acknowledged that the face recognition has played an important role in surveillance system as it doesn’t need the object’s cooperation. The actual advantages of face based identification over other biometrics are uniqueness and acceptance. As human face is a dynamic object having a high degree of variability in its appearance, that makes face detection a difficult problem in computer vision. In this work we presented a novel Face Recognition feature Extraction Mode based on the combination of Linear Discriminant Analysis (LDA) and Gaussian Mixture Model (GMM). The proposed LDA and GMM based feature Extraction Model is utilized to search the feature space for the optimal feature subset where features are carefully selected according to a well-defined discrimination criterion. For the betterment of the feature classification a KNN classifier is used. The classifier performance and the length of the selected feature vector are considered for performance evaluation using MATLAB in ORL face dataset.
References


Index Terms

Computer Science
Pattern Recognition

Keywords

Face Recognition, Feature selection, LDA, ORL Dataset, Authentication, Gaussian Mixture Model;