Abstract

Principal Component Analysis (PCA) has emerged as a more efficient approach for extracting features for many pattern classification problems. It has been the standard approach to reduce the high-dimensional original pattern vector space into low-dimensional feature vector space, that removes some of the noisy directions. PCA is an unsupervised technique which does not include label information of the data. In addition to PCA, another method Fisher Linear Discriminant (FLD) analysis has been widely used. In this paper, we report experimental results to quantify the robustness of PCA and FLD methods for face recognition. The experimentation was performed based on different levels of additive noise and rotations in handling face recognition problem. FLD outperforms the traditional PCA on the basis of robustness.
Quantitative Analysis on Robustness of FLD and PCA-based Face Recognition Algorithms


Index Terms

Computer Science

Algorithms

Keywords

Eigenface  Fisherface  Eigenvector  Featurevector  Fisher Linear Discriminant  Image Noise.