Abstract

In human face recognition method to identify someone fisherfaces. The output is recognized whether or not an input image as one of the individuals on the database. There are four main steps in face recognition methods, namely face detection, calculation of the PCA (Principal Component Analysis), FLD calculation (Fisher.s Linear Discriminant), and classification. In face detection, color segmentation is to get part of the input image that contain skin color. Calculation module PCA and FLD calculation module is used to form a set fisherfaces from a training set used. All facial images can be reconstructed from the combination fisherfaces with different weights. In the final module, is to identify by comparing the weight fisherface required to reconstruct the input image to the image in the training set.

While Eigenface method, based on Principal Component Analysis (PCA) or also called Karhunen-Loeve transformation. N-dimensional vector image is reduced to m-dimensional feature vector by performing a transformation of the vector image of the n-dimensional image space to feature space dimension-m. Eigenface method can produce a total-scatter characteristic vectors of the maximum. This is precisely the weakness Eigenface method to input images in lighting and expression variations, as it would result in classification based on the lighting and expression. By combining PCA with Fisher's Linear Discriminant (FLD), the method Fisherface expected to be able to overcome the weaknesses Eigenface method. FLD can simplify the classification by maximizing the ratio between the between-class scatter to within-class scatter. The ratio of maximum to produce classifications that are not sensitive either to changes in lighting and expression.

This thesis tries to compare the recognition accuracy and Fisherface Eigenface method. Experimental results show that the method Fisherface have a higher recognition accuracy than Eigenface methods for facial image in a lot of lighting variation and expression variation. Eigenface'm thinking about a better recognition accuracy for slight variations of light.

Keywords: *fisherfaces, eigenface, face detection, PCA, FLD, classification, Euclidian distance*