Abstract

Principal Component Analysis(PCA) is common method which is used to recognize pattern, including face recognition. Principal Component Analysis use a set of high dimension data which describe a bunch of training images. PCA is going to take important features and patterns from those set of high dimension data by reducing it to be a set of lower dimension data. A set of lower dimension data will be used to recognize a test t image.

PCA do not recognize images by using some features in human face, such as : eyes, mouth, nose, etc. For that reason, PCA has disadvantages when training and test images used have variation of pose, expression, and illumination.

Projected Combined Principal Component Analysis(PC2A) is an extension method of Principal Component Analysis method. PC2A's purpose is to handle disadvantages because of variation of pose, expression, and illumination occur at PCA method. PC2A extend PCA method by doing pre-processing training images before performs that training images in training process. Original face image will be transformed to be a new face image which will be powerfull against variation of pose, expression, and illumination. PC2A will use those transformed face image as training image.

Keywords: face recognition , eigenfaces, principal componenct analysis, projected combined principal component analysis, image