

Abstract

Face recognition is one of the most popular biometric recognition. Facial recognition technology developed rapidly as development era. Various methods proposed for creating a reliable face recognition system. Face recognition is used to things like surveillance, missing person searches, identification of crime suspects, and access to valuable assets. Through the introduction of a person's face can be recognized from the "who the person is" not "what he had" (keys, ID card) or "what he knew" (keywords, PIN).

Fisherface is one of the methods used to recognize faces. This method is derived from Fisher's Linear Discriminant (FLD), which combined with Principal Component Analysis (PCA). PCA served to reduce the input data in order to facilitate and accelerate the process of FLD. The aim of FLD is to produce a scatter matrix to facilitate the classification and recognition. In the end projection of PCA and FLD combined to produce projection data at fisher space called Fisherface.

The experiment used maximum of 11 individuals and a minimum of eight individuals with 16 train samples and four test images per individual. In the image classes that experienced changes in expression with normal lighting obtained a system accuracy of 97,73%. In the image classes that experienced changes in lighting obtained a system accuracy of 63,64%. In the image classes that experienced cropping obtained a system accuracy of 6,82%. Fisherface can classify five of eight individuals perfectly in the experiment with eight individuals.

Keywords: biometric recognition, face recognition, Fisherface, Principal Component Analysis, Fisher's Linear Discriminant