ABSTRACT

Palmprint identification is one of the biometrics which is currently studied. If we compared with another biometrics, palmprint has several advantages, such as stability in characteristics and we can be acquired by a low resolution image, so it can minimize of costs. In this thesis we try to analyze about gaussian kernel function on Kernel Fisher Discriminant Analysis (KFDA) for recognition or identification of the palmprint.

Fisher Linear Discriminant Analysis (FLDA) is often used to recognition of biometrics. In the case, the gaussian kernel function applied to the FLDA method to solve the nonlinear problems of the data palmprint. First, image data of palmprint transformed using Principal Component Analysis (PCA), and then transformed by kernel space, and in the last transformed by KFDA to obtain the characteristics of image data for individu. The results of palmprint feature recognition be used to identification process using euclide distance.

In this final project, we used 2881 total data images from 244 individu where the data get from a webcam and from the IIT Delhi touchless palmprint database [12]. The testing do by test and evaluation feature length of PCA, feature length of KFDA, the value of the regularization parameter, and the value of the sigma parameter from gaussian kernel function on the KFDA. From the test results, we get the best results of accuracy is 98,87% with 75% of PCA's feature, 75% of KFDA's feature, the value of parameter regularization is 0,0001, and the value of parameter sigma is 10 .

Keywords: Biometric, Palmprint, Principal Component Analysis, PCA, kernel trick, gaussian kernel, Kernel Fisher Discriminant Analysis, KFDA.