Task5

Face Recognition

Submitted by :-

Micheal Ramez

Nadine Samy

Ingrid Ahab

Bishoy Gamal

Date:-

17th May,2013

Group Number :- 11

First trial function :

its output are transpose of Eigen vectors , mean of Dataset and training features.

Steps:

1-We read images of 15 students. For every student we take 6 images each.

2-We converted every image into column. Put it into a matrix called X.

3-Getting X transposes and gives it to princomp function to get Eigen values and Eigen vectors.

4-Using an equation we get Eigen values and vectors with the greatest weights.

5-Getting training features by multiplying transpose of Eigen vectors with X matrix.

Second match function:

Its input are training features , transpose of Eigen vectors , mean of Dataset and image to be tested & the threhold.

Its output is the number of student it belongs to.[STR]

Steps:

1-Multiply transpose of Eigen vectors with (the image - mean of dataset) to get " Test features".

2-Calculate the Euclidean distance between the test features and training features to get the error related to each student.

3- Apply Random thresholds (66 000,72 000 ,78 000) on Eculidean distances and then plot ROC curve where x axis is sensitivity and y axis is specificity.

4- Choose the best threshold that provides the best point on the ROC curve.

5- Apply that best threshold and compare it with the min of Eculidean distances and by this we can determine whether the images is found in the dataset or not.

If STR <threshold ,then it will be found in our dataset and we will detect the index of the student..Else it won't be found in our dataset.