

CS663: Digital Image Processing - Homework 4

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October 22, 2024

1 Homework 4 - Question 4

For ORL Dataset:

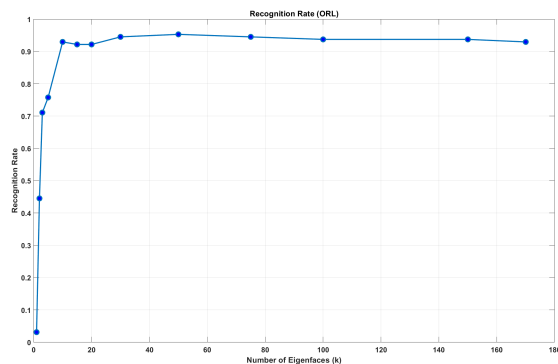


Figure 1: Recognition Rate using the `eig` method for ORL dataset

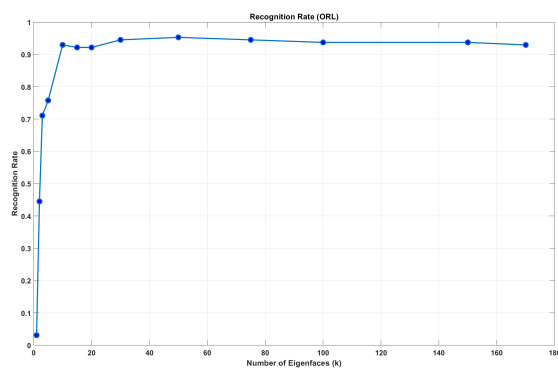


Figure 2: Recognition Rate using the `svd` method for ORL dataset

For Yale Dataset:

(a) All eigencoefs:

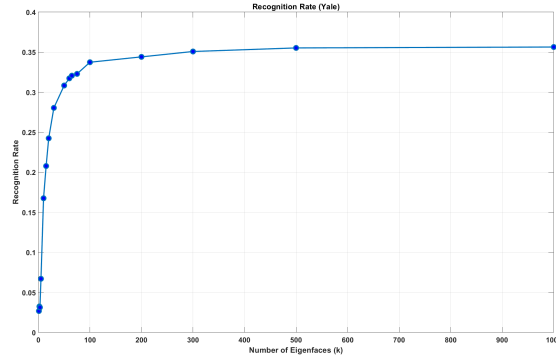


Figure 3: Recognition Rate using all the eigencoefs for Yale dataset

(b) Excluding top 3 eigencoefs:

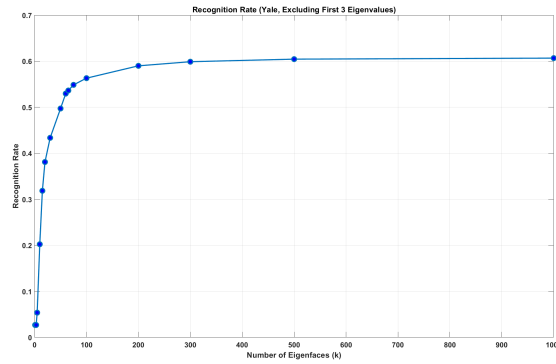


Figure 4: Recognition Rate using all *except* 3 eigencoefs corresponding to the largest eigenvalues for Yale dataset

Observation: It can be seen from both the plots that neglecting the top 3 eigen coefs gives better results since it will lead to more filtering of low light illumination

Reconstruction of Image (from ORL):

The reconstructed images for an example from the ORL dataset are as follows:



The plot for 25 eigenvectors corresponding to the 25 largest eigenvalues is as follows:

