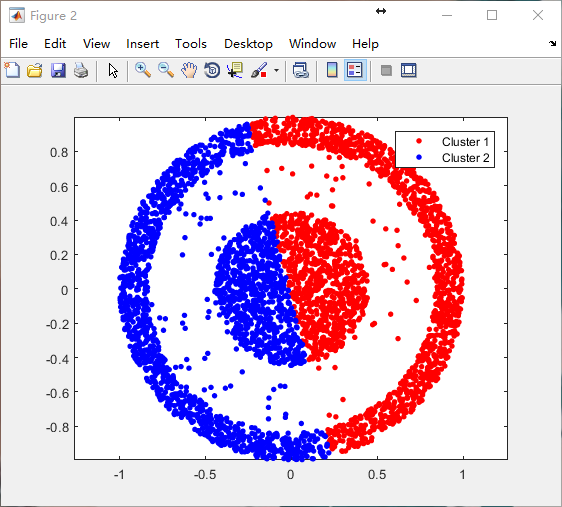
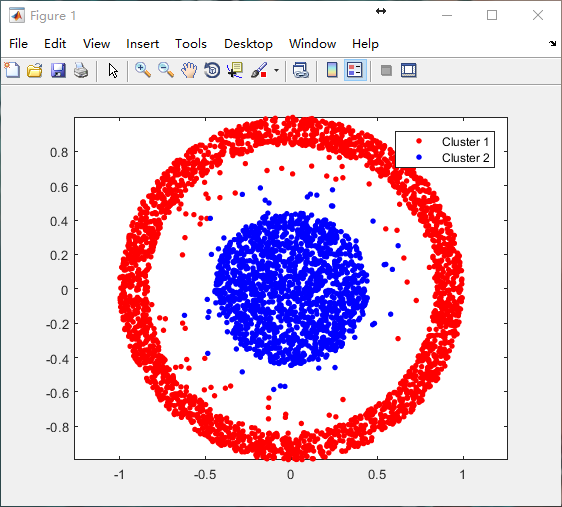
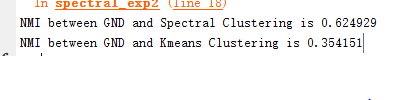
Machine Learning: Assignment #4 Fall 2017

1. Spectral Clustering

(a)



(b)

The average result of 10 loops

2. Principal Component Analysis

(a)



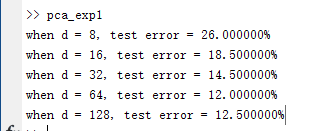


Find the first principle component and calculate its angle, and rotate it by imrotate(). Of course we can rotate all pixels of the image manually, but it has too many artifacts because of no interpolations.

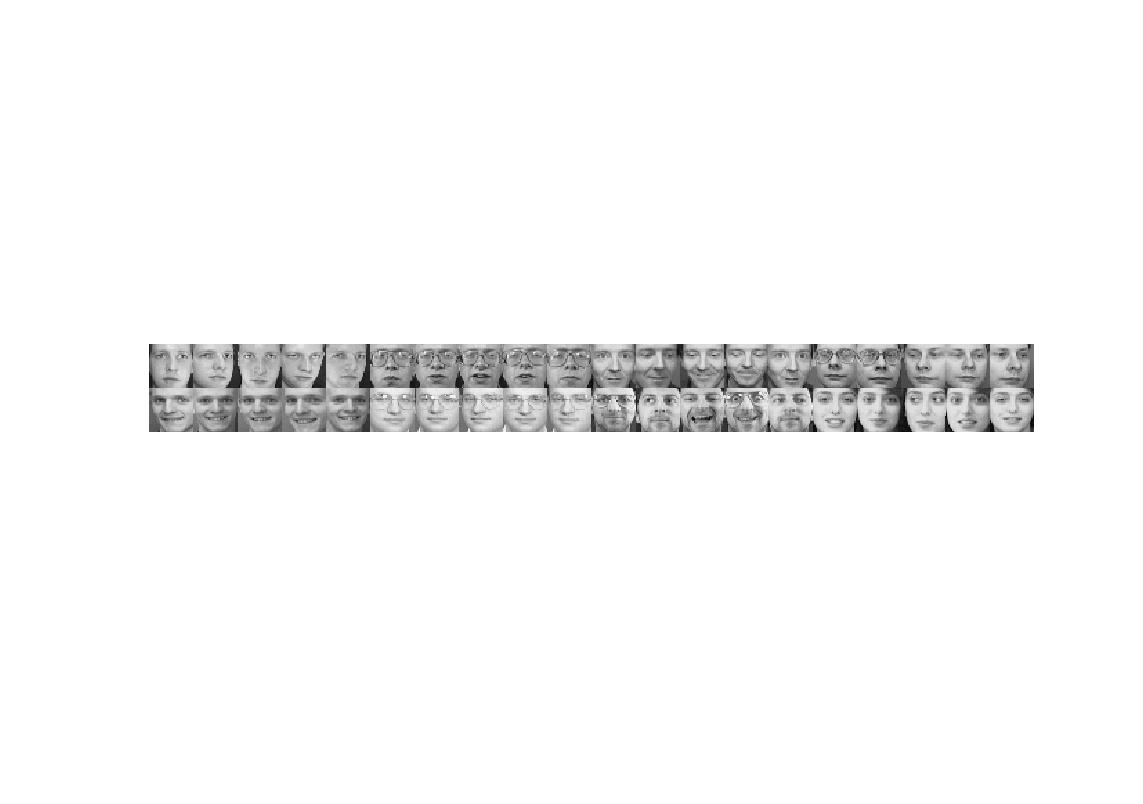
(b)

E

Eigen face



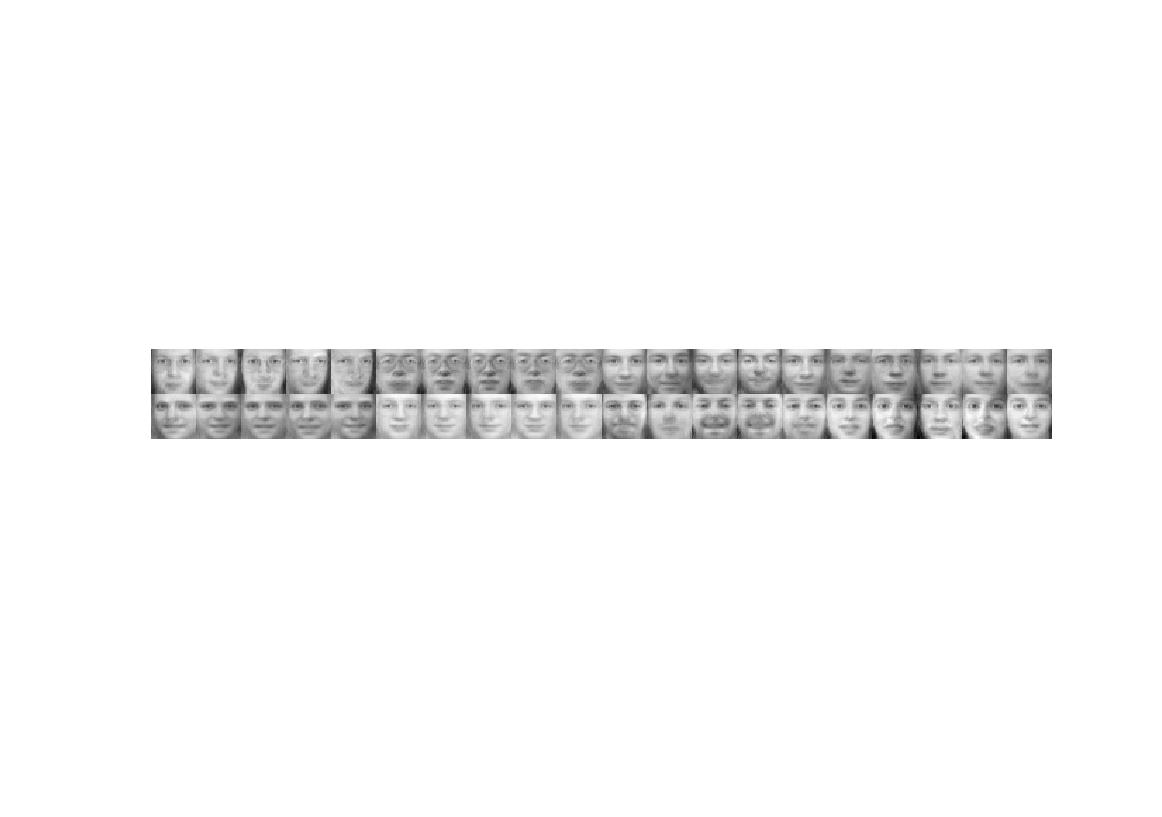
(c)



Original Image



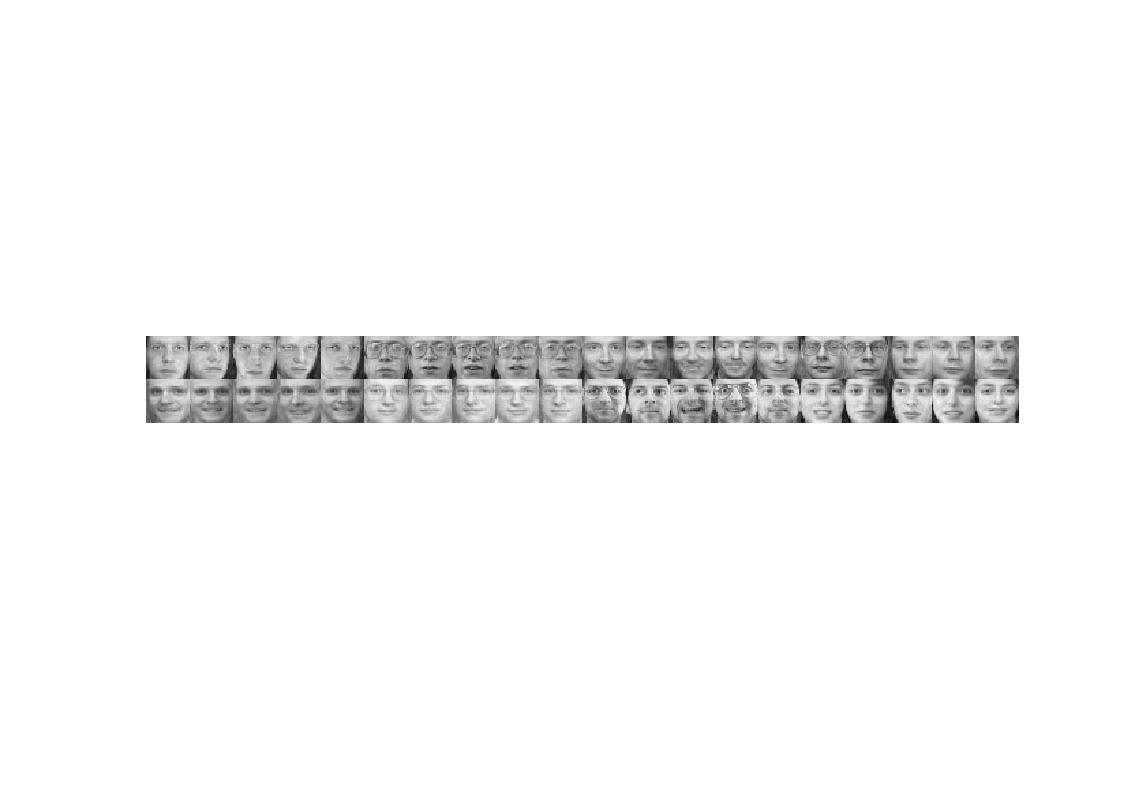
Recover from d = 8



Recover from d = 16



Recover from d = 32



Recover from d = 64



Recover from d= 128