

Homework 1. PCA and MDS

*Reported by: Wei Cheng**Due: Open Date*

1 PCA experiments

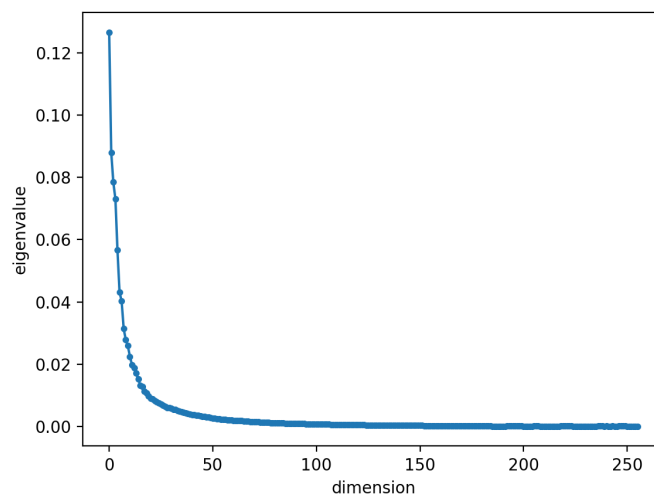


Figure 1: Percentage of singular values over total sum.

2 MDS of cities

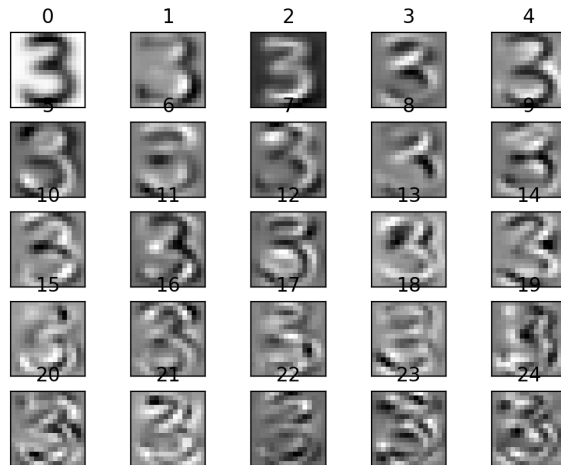


Figure 2: Images of the sample mean and top 24 principle components.

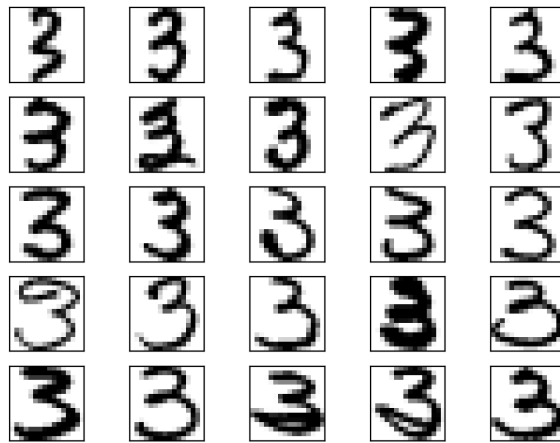


Figure 3: Sort the image data samples according to top 1 eigenvector embedding. Listed images are uniformly sampled according to the embedding.

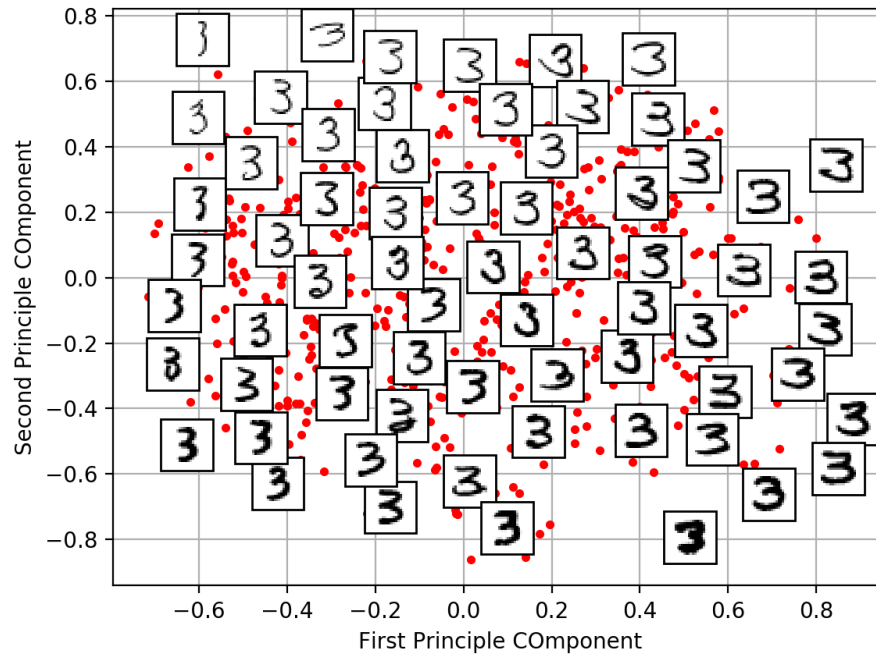


Figure 4: The first two principal components of the hand-written threes. The images show the nature of the first two principal components.

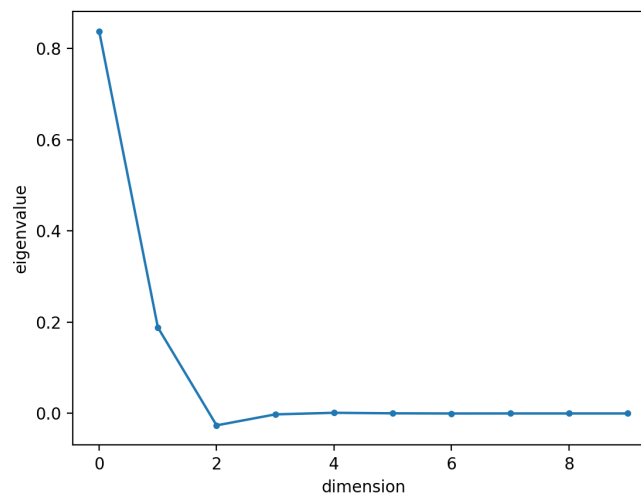


Figure 5: Normalized eigenvalue of MDS, where the third eigenvalue is negative.

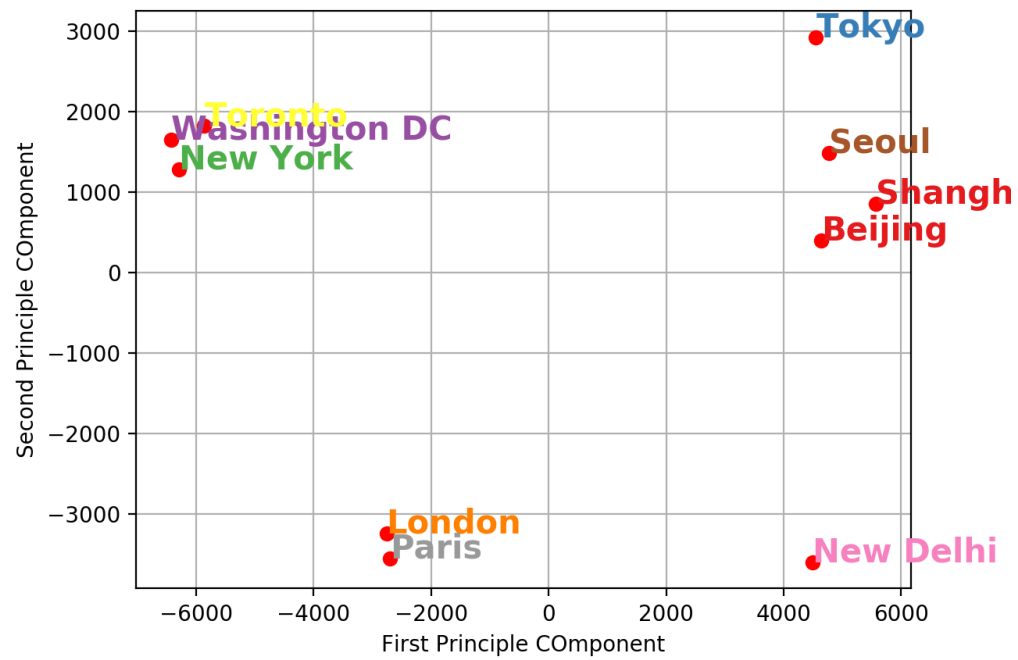


Figure 6: Sort the image data samples according to top 1 eigenvector embedding. Listed images are uniformly sampled according to the embedding.