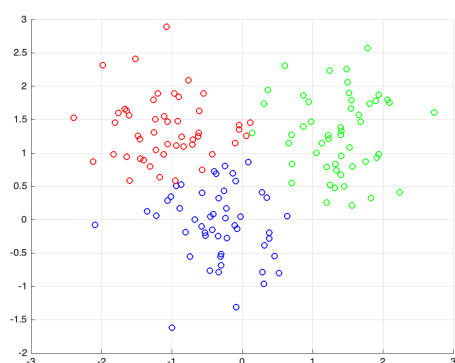


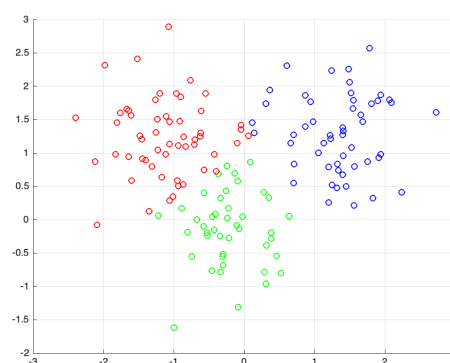
CSE 847 (Spring 2019): Machine Learning— Homework 5

Xitong Zhang
zhangxit@msu.edu

1 K-Means



(a) K-Means Results



(b) Spectral K-Means Results

Figure 1: Clustering Visualization

2 PCA

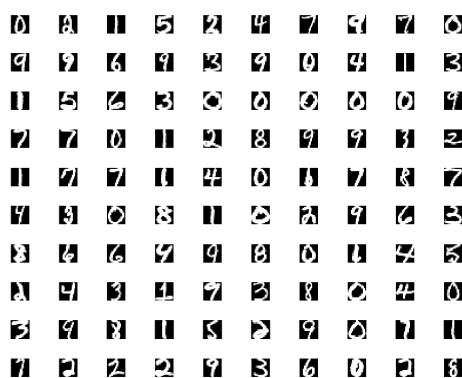
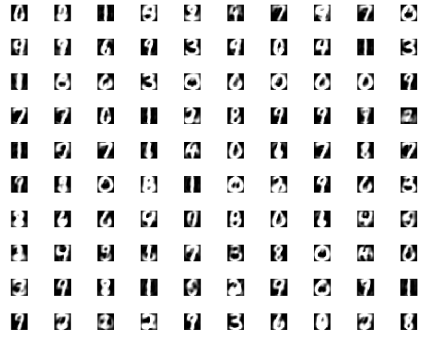
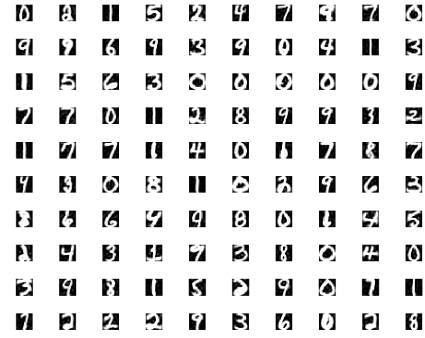


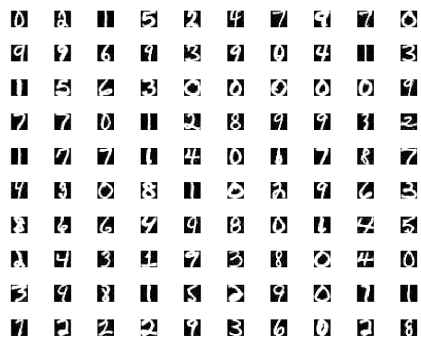
Figure 2: Raw images



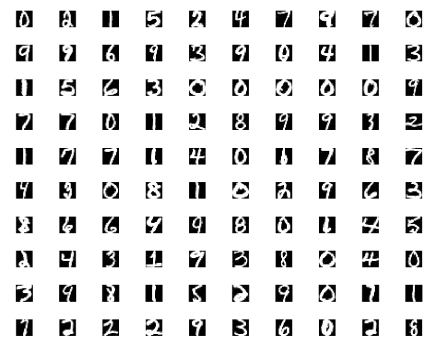
(a) 10 Principle Components, MSE: 612.7



(b) 50 Principle Components, MSE: 160.5



(a) 10 Principle Components, MSE: 55.9



(b) 50 Principle Components, MSE: 5.4