Project 1

October 2, 2019

1. Dataset: Fashion-MNIST dataset from `https://github.com/zalandoresearch/fashion-mnist`. The dataset description is also there.

   Basically it has a training set with 60000 28×28 grayscale images of 10 classes. The testing set has 10000 images with the same size.

2. Methods:

   (a) Use ML estimation with Gaussian assumption followed by Bayes rule for classification (on raw pixels).

   (b) Use nearest neighbor rule for classification (on raw pixels).

   (c) For both two methods above, use PCA and LDA for dimensionality reduction.

3. Programming language: MATLAB, Python, etc.

4. Submission:

   Submit a report detailing the methods employed, experiments performed and results.

   Some guidelines for writing the report:

   - Please be concise. Please do not write more than 5-6 pages of text (excluding figures).
   - No need to explain ML estimation, Bayes rule, NN rule, PCA and LDA in detail.
   - Just concentrate on the experiments and discuss the results you have obtained.

   Besides your report, submit a zip file containing the codes. The project should be done INDIVIDUALLY. Due on November 4th, 5:00 pm.