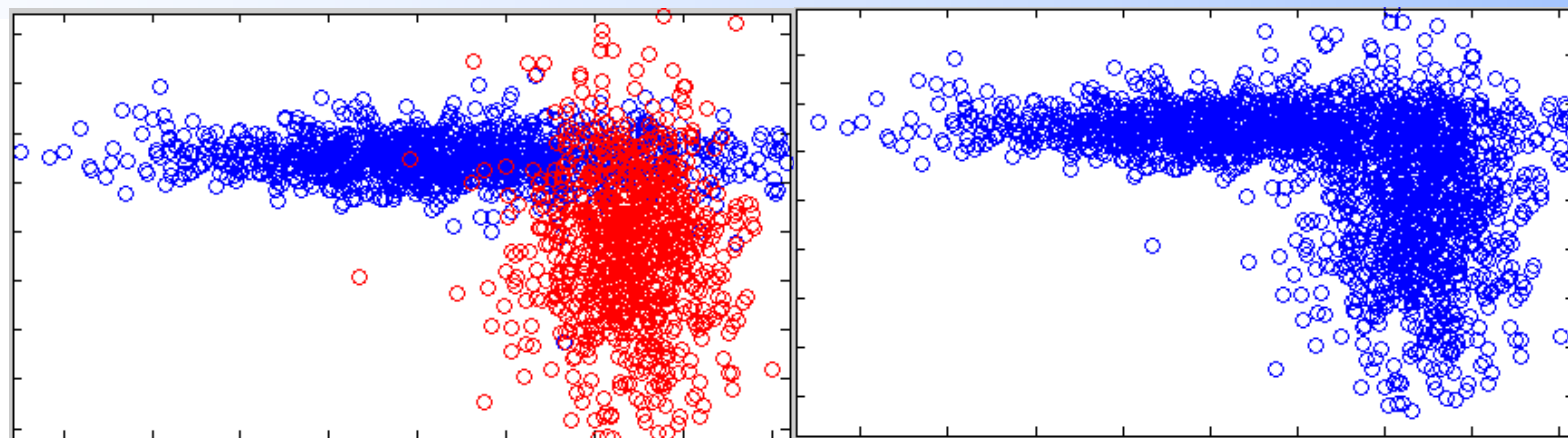# Exercise solutions

# 3. Parametric methods

ML  (a) 90.2%
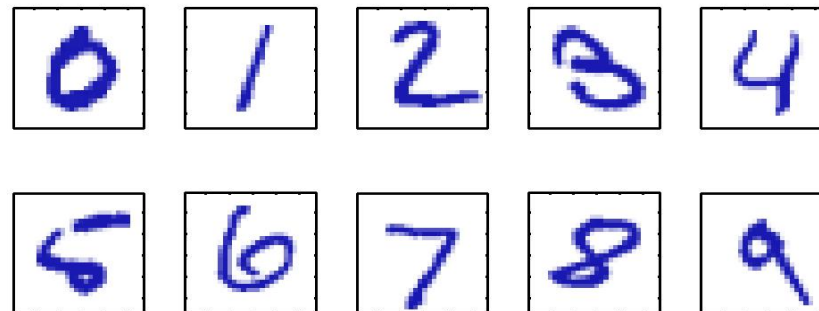
(b) 88.8%

Prior  (c) 96.3%

Unsupervised

It's not easy to recognize speech.

It's not easy to wreck a nice beach.
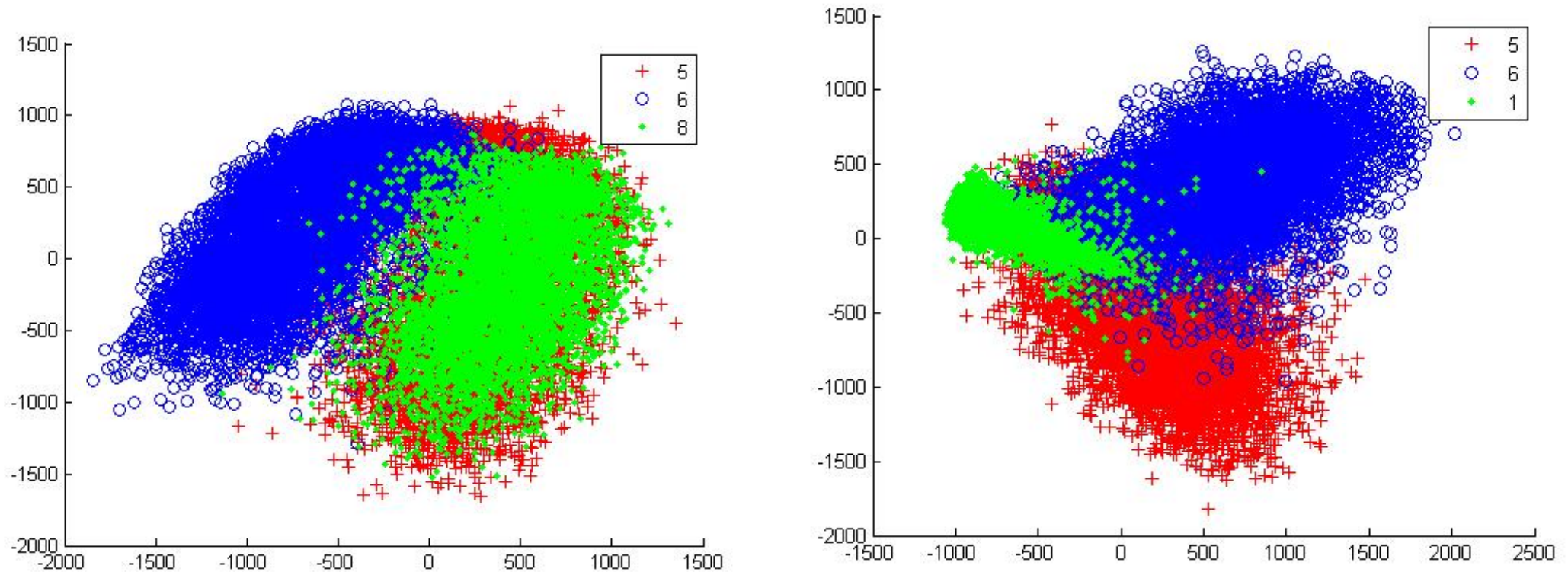
Dim = 784!

L4 - Dimensionalty reduction

L5 - Clustering

# Back to lecture slides

- All the data needed for the class assignments are also shared under Dropbox: link to data.

- Algorithm Illustration by Code for PCA is uploaded onto Moodle
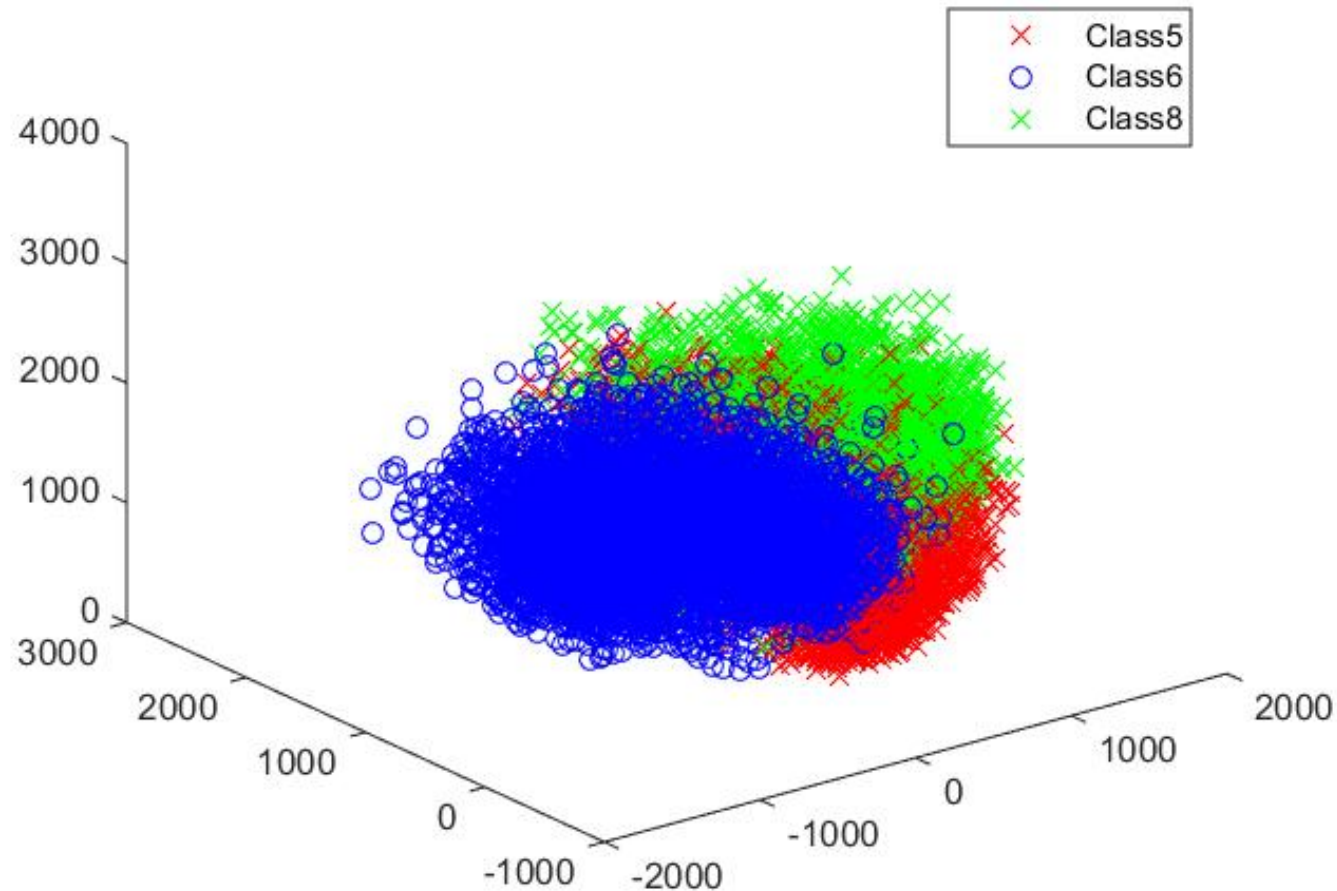
- Include tSNE in the code
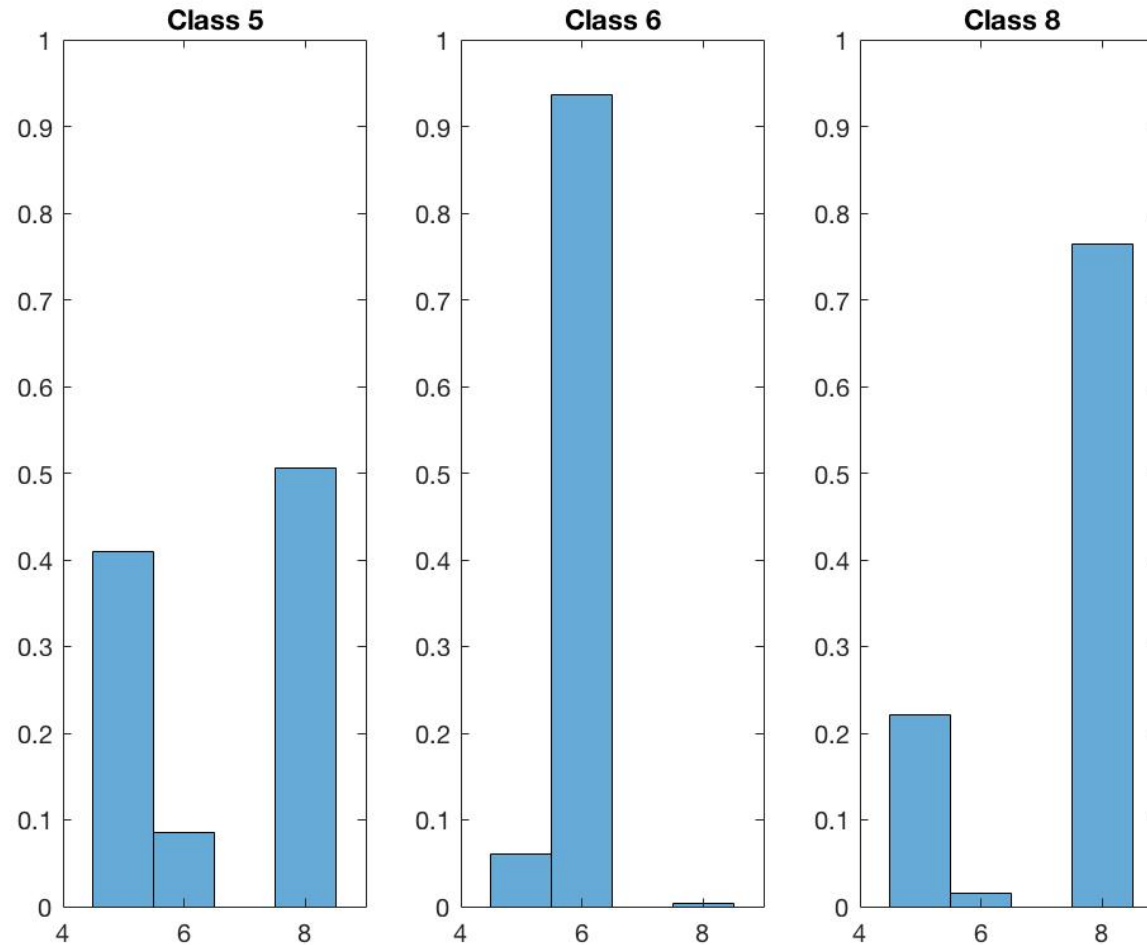
# 4. Dimensionality reduction



- Accuracy for 2D PCA: 71%

- Class 5 acc: 45%
- Class 6 acc: 93%
- Class 8 acc: 73%

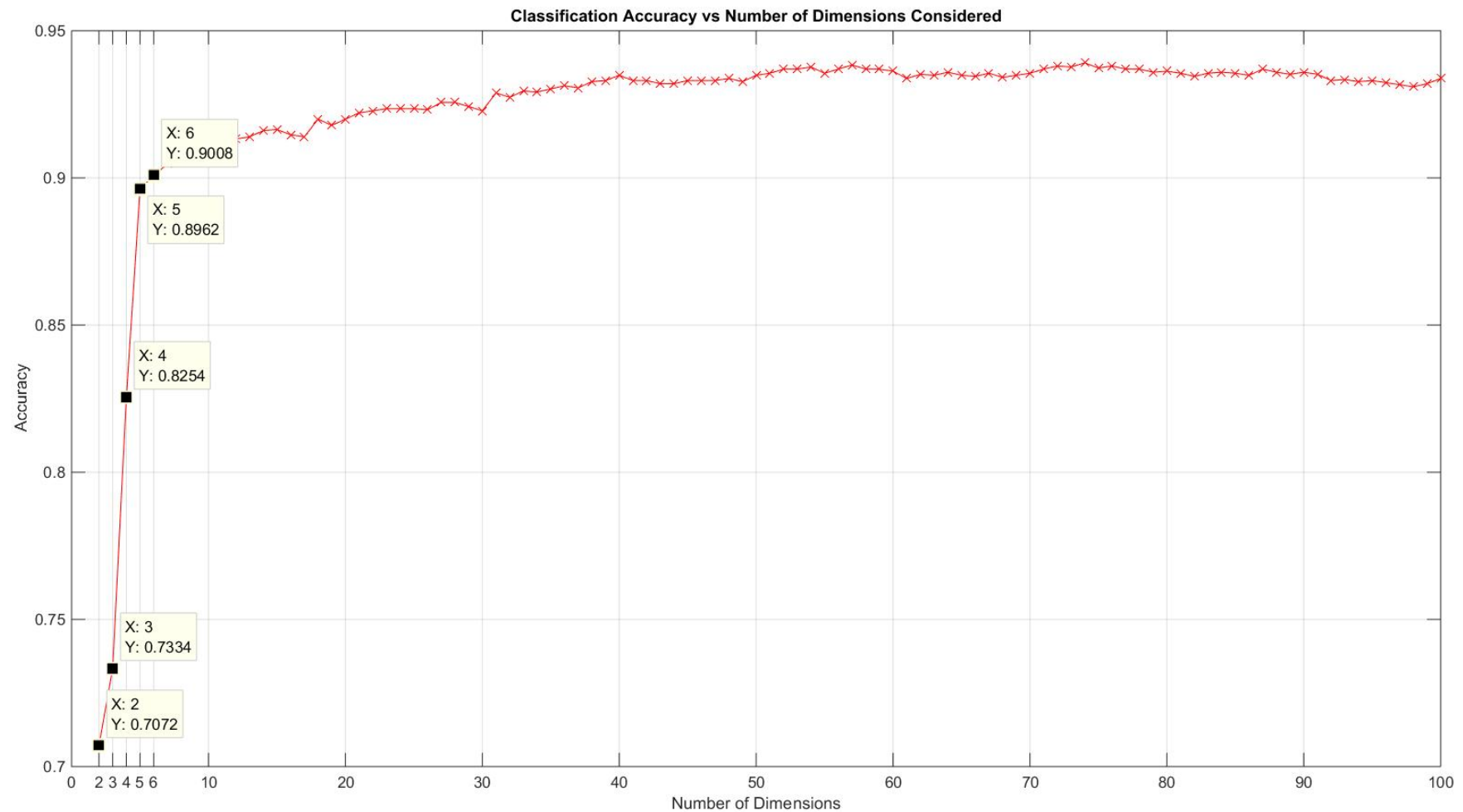# Using 3 eigenvectors for projection



3D plot for 1st, 2nd and 3rd eigenvectors

# Confusion plot

# Accuracy vs dimensions



Classification Accuracy vs Number of Dimensions Considered

- Use statistics from the training data, not from test data, e.g. when using PCA!

- You have no access to the mean of the test data.