

CS5691: Pattern Recognition and Machine Learning

Programming Assignment 4

Deadline: April 27, 11:59 pm

Use the datasets provided in Assignment 3 and apply the following classifiers to the same:

- K-nearest Neighbor
- Logistic Regression
- SVM
- ANN

Datasets (same as Assignment-3):

- Image dataset
- Synthetic dataset
- Isolated digits dataset
- Handwritten character datasets

Guidelines:

1. KNN: Try different values of K and report the accuracies and misclassification rates for each of the datasets.
2. Perform similar experiments with the other classifiers.
3. Apply PCA to the feature vectors and try different classifiers on the lower-dimensional data.
4. Apply LDA and try out different classifiers on the lower-dimensional data. Compare your results with that PCA.
5. Plot confusion matrices, ROC curves, and DET curves for the aforementioned classifiers and the datasets.
6. You can use inbuilt libraries for SVM and ANN.

Libraries not allowed: Inbuilt libraries for KNN, Logistic-regression, LDA, PCA.

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