

K-NEAREST NEIGHBORS:

Synthetic dataset:

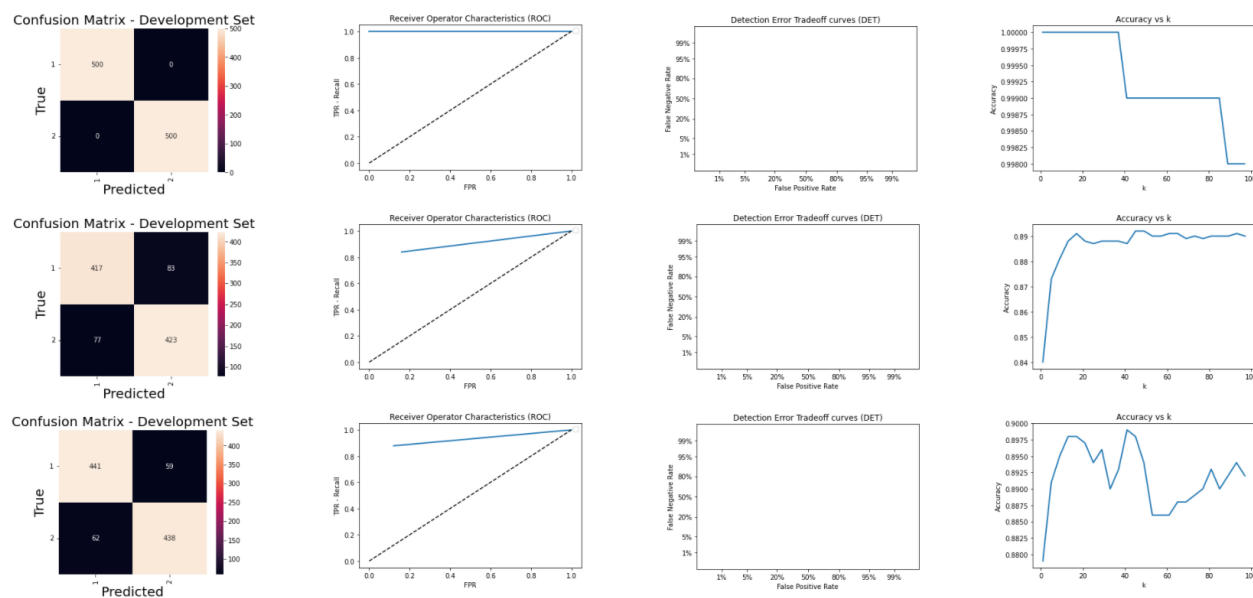


Figure 1: Confusion matrix, ROC curve, DET curve, and Accuracy vs k (number of neighbors) for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

Images dataset:

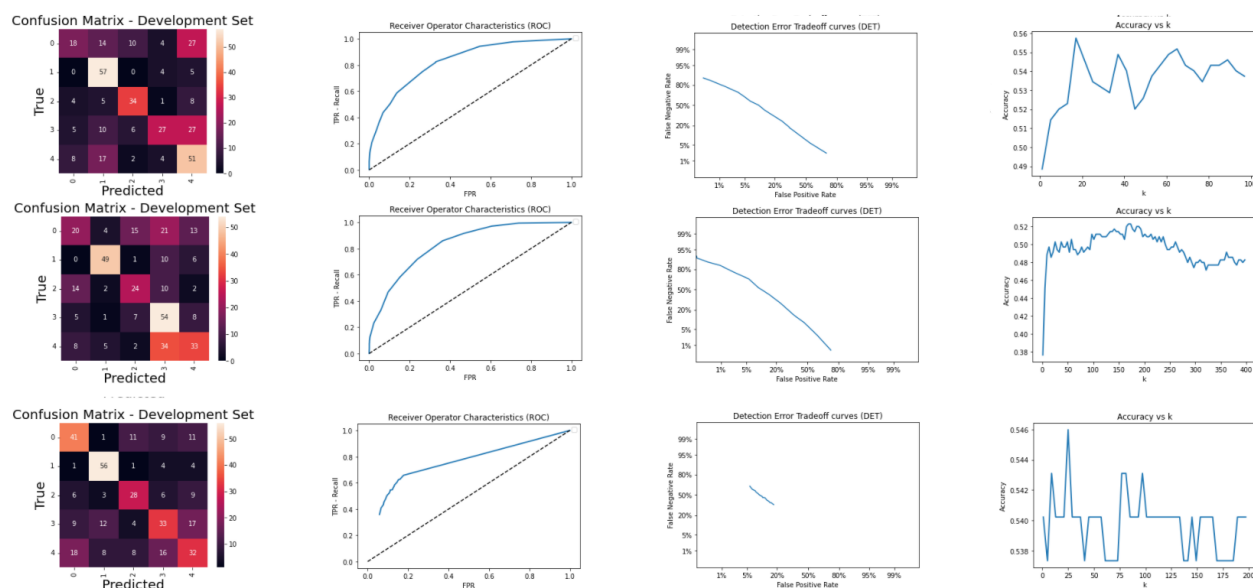


Figure 2: Confusion matrix, ROC curve, DET curve, and Accuracy vs k (number of neighbors) for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

Isolated digits dataset:

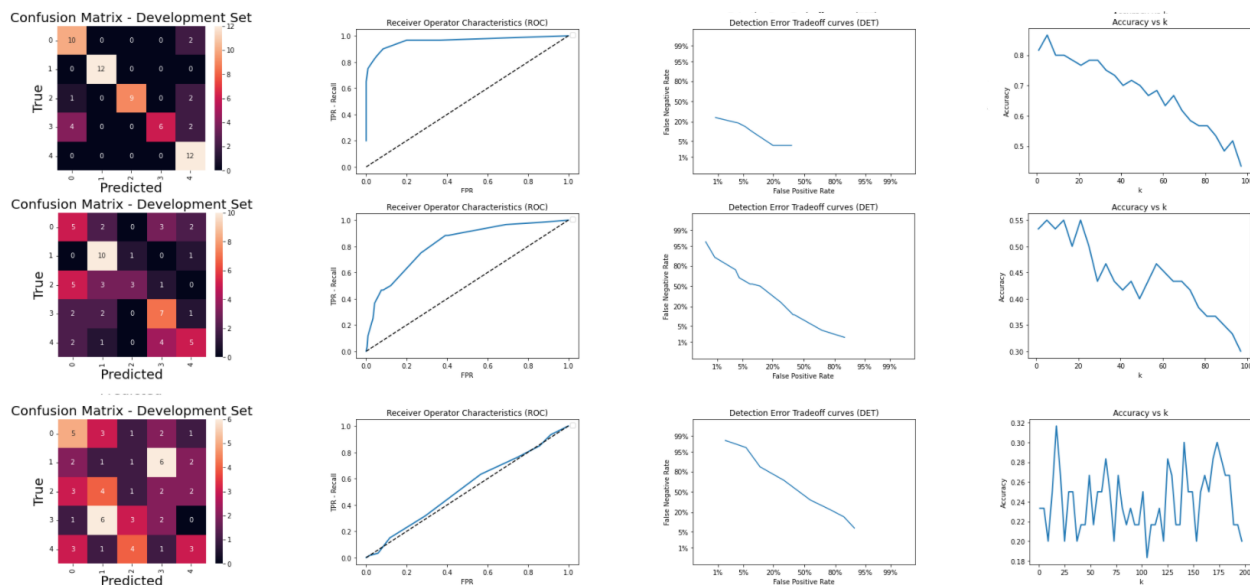


Figure 3: Confusion matrix, ROC curve, DET curve, and Accuracy vs k (number of neighbors) for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

Handwriting dataset:

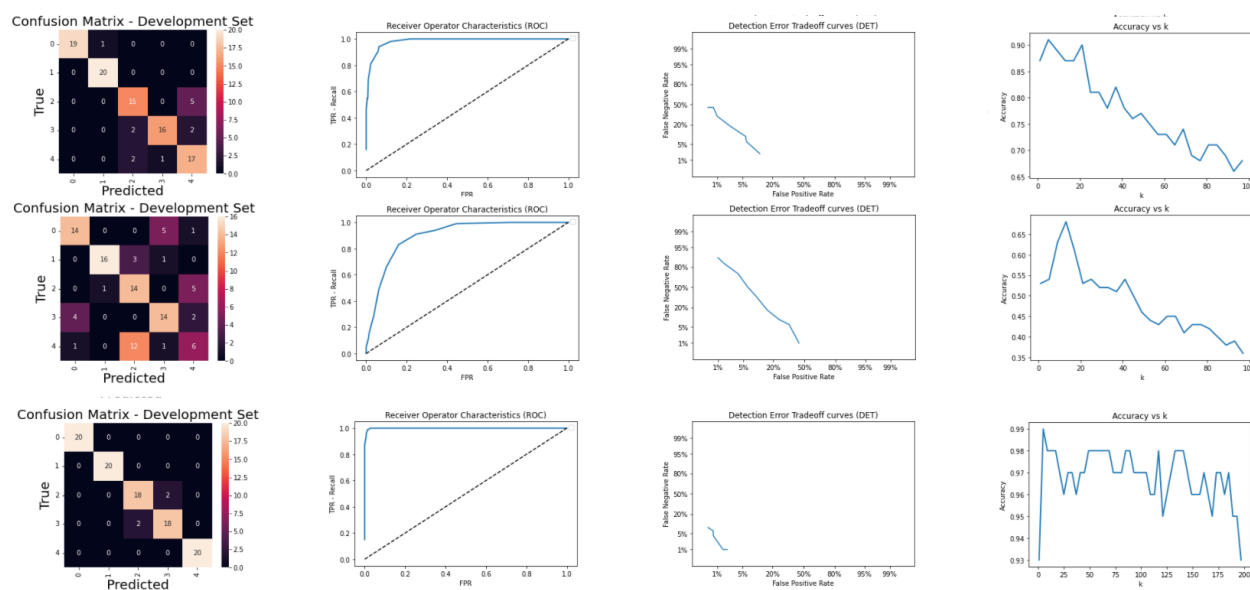


Figure 4: Confusion matrix, ROC curve, DET curve, and Accuracy vs k (number of neighbors) for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

LOGISTIC REGRESSION:

Synthetic dataset:

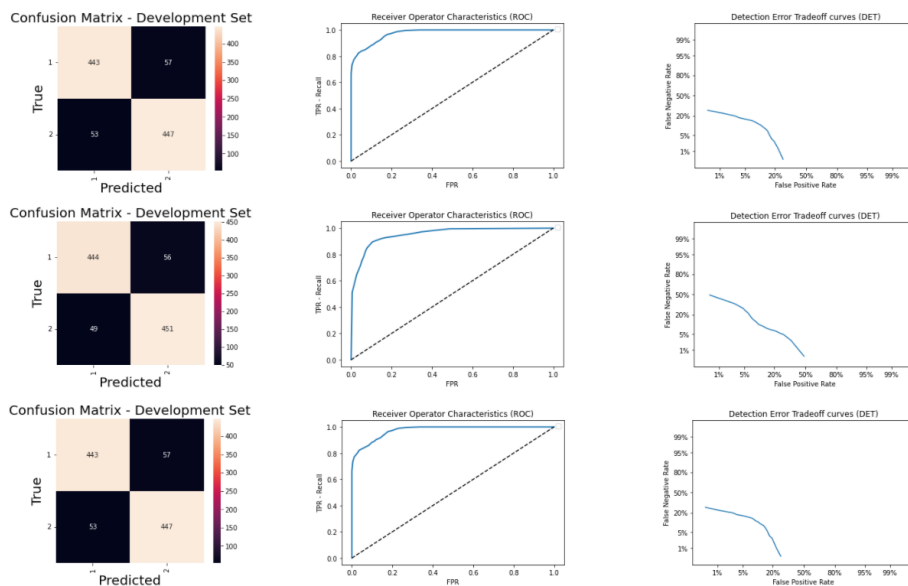


Figure 5: Confusion matrix, ROC curve, DET curve for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

Images dataset:

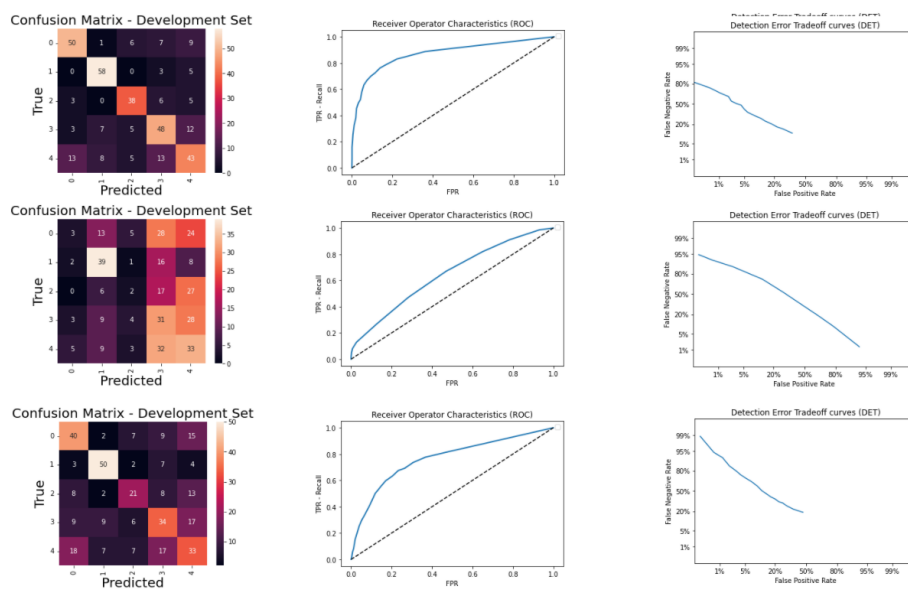


Figure 6: Confusion matrix, ROC curve, DET curve for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

Isolated digits dataset:

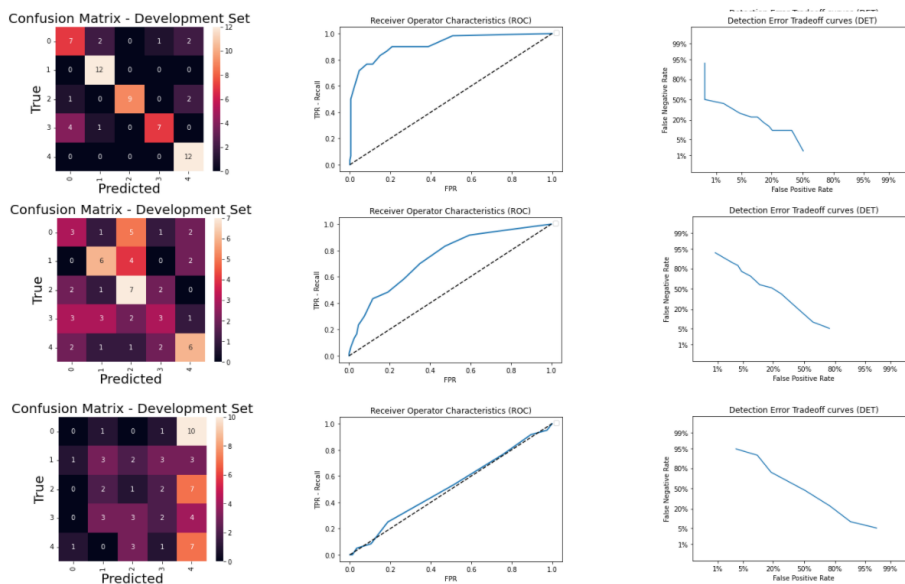


Figure 7: Confusion matrix, ROC curve, DET curve for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

Handwriting dataset:

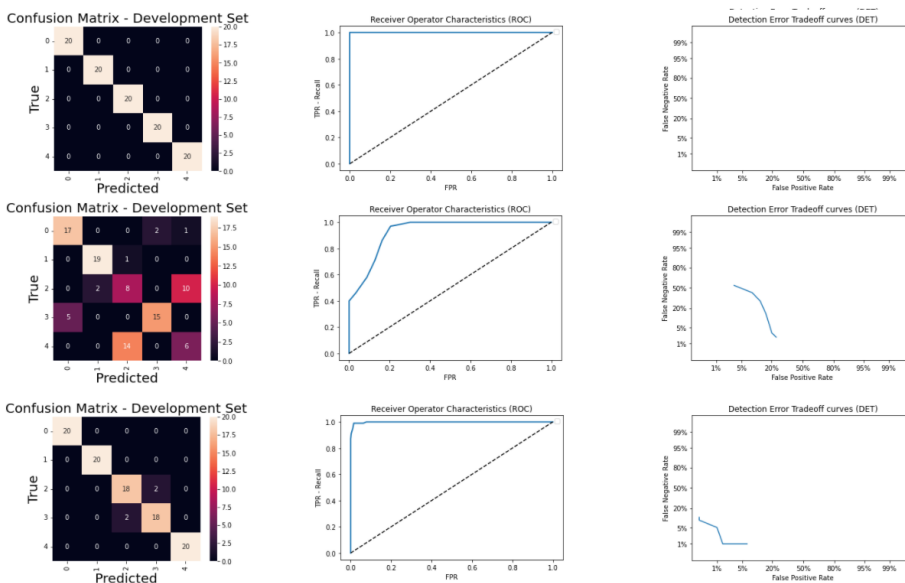


Figure 8: Confusion matrix, ROC curve, DET curve for the original dataset (first row), PCA-reduced dataset (second row), and LDA-reduced dataset (third row)

K-Nearest Neighbor and Logistic regression were able to perform well on the original datasets, compared to the PCA-reduced and the LDA-reduced datasets. Also, the algorithms performed better in the LDA-reduced datasets, compared to the PCA-reduced datasets. This shows that LDA is able to find better discriminatory features that are helpful for classification. But, it also leads to drastic information loss that the performance of the algorithms in the original dataset is far better.