
ML Assignment 2: Comparison Between ML Models

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1 Comparative Results

We note that the Support Vector Machine performs the best on the train and test set, even though all methods give a fairly high accuracy. This might be because the dataset shows a good separation between classes. We might have been able to see a bigger variation/difference in performance if the dataset was more difficult to separate. Perceptron performs the worst, probably because it separates using a linear decision boundary, which separates the dataset slightly worse than what other complex hyperplanes that other models produce do.

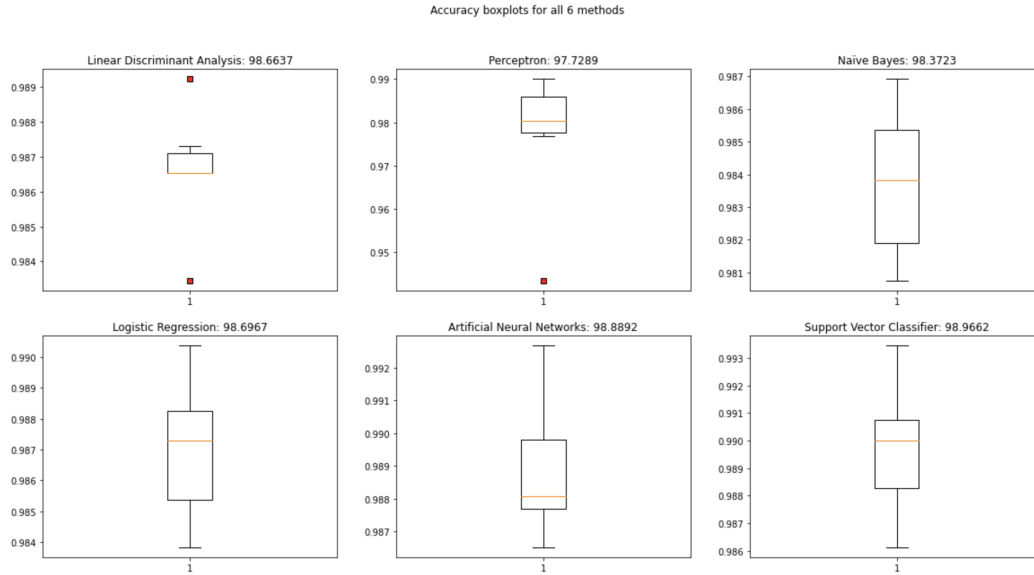


Figure 1: Boxplots for each method. We note that the mean accuracy of each model is fairly similar.

Model	Train accuracy (%)	Test accuracy(%)
Linear Discriminant Analysis	98.6747	98.6637
Perceptron	97.7445	97.7289
Naïve Bayes	98.3650	98.3722
Logistic Regression	98.7031	98.6967
Neural Network	98.9249	98.8892
Support Vector Machine	98.9873	98.9662