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Gaussian Discriminant Analysis

Dataset - Microchip Dataset
Data set contains 118 sample points. Each data point has two features. Each sample point belongs to either class 1 or class 0.
70 % of this data is taken as a training set and 30 % data is taken as a testing set.

Gaussian Discriminant Analysis

After dividing the data in training and test data set we apply Gaussian Discriminant Analysis algorithm on given data.

Gaussian Discriminant Analysis With Box-Muller Transformation

First, we convert the data in the range of 0-1 and then apply Box-Muller Transformation on it. Box-Muller technique is used to transform the given data into Normal Distribution.

Results:

Accuracy of GDA on testing set is 50 %
Accuracy of GDA with Box Muller Transform on the test set is 69.44%

Analysis:

GDA with Box Muller Transform has better accuracy because after applying Box-Muller Transformation, data get distributed normally.
Data belonging to the same class may be found near to mean or away from the mean. The probability of data point near to mean is high as compared to the data point away from mean giving us better probability model to classify the data.