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GDA Assignment

Gaussian Discriminant Analysis

In this Assignment, GDA analysis is done on Microchip data with Box Muller Transformation and without B-M transformation.

BOX - MULLER Transformation :- A Box Muller transform takes a continuous, two dimensional uniform distribution and transforms it to a normal distribution.
Let's say U_1 and U_2 are our original independent random variables; they are uniformly distributed in the interval (0,1). The Box-Muller transformation creates new Z_0 and Z_1; independent, random variables that have a standard normal distribution:

$$Z_0 = R\cos(\Theta) = \sqrt{-2\ln U_1}\cos(2\pi U_2)$$

$$Z_1 = R\sin(\Theta) = \sqrt{-2\ln U_1}\sin(2\pi U_2)$$

GDA Analysis	Accuracy of Prediction of Classes
With BOX - MULLER	63%
Without BOX - MULLER	47%

In this GDA analysis, with the help of Box Muller Transformation, Prediction of classes is better than without Box Muller Transformation.