Performance of Multivariate Normal Distribution

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***Abstract*—This paper describes the performance of multivariate normal distribution relative to performance of individual normal distribution by looking at their accuracy values and error rates**

Keywords— normal distribution, accuracy, error rate, multivariate

I. INTRODUCTION

Examining performance of multivariate normal distribution including two distributions which are normally distributed against individual evaluation.

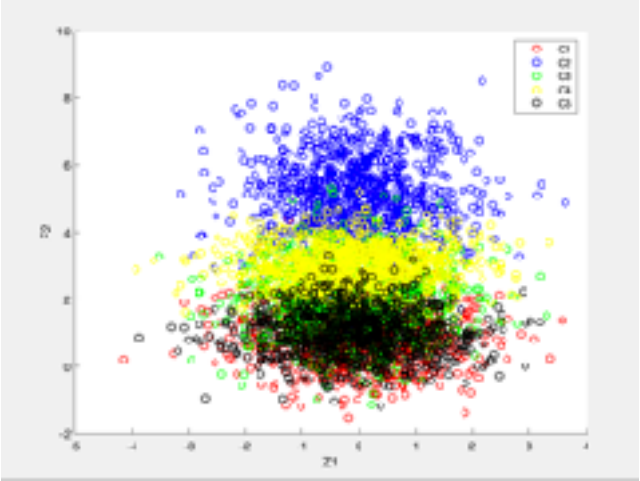
II. SUMMARY

Every data point given is assigned to one of the five different classes C1, C2, C3, C4 and C5. We've obtain mean and variance values for five classes for two observations F1 and F2 since we know the classes have a normal distribution.

First we have used only first observation to make a prediction. Later we've normalised the observation value and used the z-score value to make predictions. The third part estimated the class by taking normalised value of first observation and second observation.

By observing prediction accuracies, we can clearly see multivariate normal distribution performs well. Accuracy of normal distribution is 53%, with standardised normal distribution has an accuracy of 52.62%, but with multivariate accuracy is 79.62%.

Graph depicting the class distribution :



III. CONCLUSIONS

Observing the results, predicting probability of a class by normalising gives an accuracy loss. Multivariate norma distributions give far better results than individual results. So, collecting various feature data for an experimenting results in more accurate data.

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