

Graduate Certificate in Artificial Intelligence with Machine Learning
AIGC 5002 - Machine Learning and Deep Learning
Fall 2023

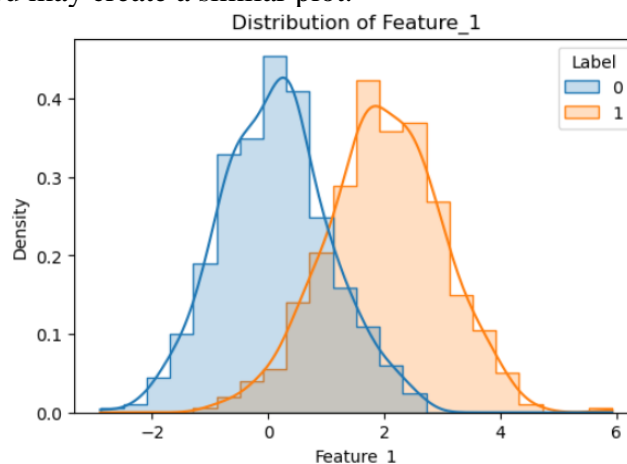
Lab 7:
Gaussian Naïve Bayes Classifier
November 1, 2023

Submission guidelines:

- For this lab, you will need to submit 1 PDF file by the end of lab time.
- After you complete all the exercises, convert your Jupyter Notebook (.ipynb) to PDF. Name the PDF as follows: `firstname_lastname_LAB7.pdf`
- Go to the course Blackboard → Labs folder → Lab 7 and submit the pdf.

After following the lab tutorial, find a dataset in a field of your choice that is suitable for binary classification and has numerical features. Answer the following questions:

- What is Gaussian NBC? Are there any additional assumptions that need to be met for this type of NBCs? If so what are they?
- We have covered histograms before. What are they and what can they provide information on?
- Research KDE (Kernel Density Estimation) plots and understand what information they provide.
- Verify that your features are normally distributed or use only features that are normally distributed to design and test a Gaussian NBC.
- The figure below shows a sample plot of histograms and KDEs to determine the normality of a feature. You may create a similar plot.



- Compute the confusion matrix and accuracy on the test data.

Enjoy!