**CS5720**

**Neural Networks & Deep Learning - ICP-5**

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**Github Link**: <https://github.com/csk17/NN-DL_ICP5>

1. Implement Naïve Bayes method using scikit-learn library Use dataset available with name **glass**Use **train\_test\_split** to create training and testing part Evaluate the model on **test part** using score and

classification\_report(y\_true, y\_pred)

2. Implement linear SVM method using scikit library Use the same dataset above  
Use **train\_test\_split** to create training and testing part Evaluate the model on **test part** using score and

classification\_report(y\_true, y\_pred)

Which algorithm you got better accuracy? Can you justify why?

**Solution:**

* Firstly, the libraries were imported such as pandas, sklearn.svm, sklearn.naive\_bayes.
* Then, read the provided dataframe from read() function and printed.
* The dataframe is splitted into train & test.
* Now feature the coloumns of the dataframe.
* Implement the naïve bayes classifier & train it.
* Now, the naïve bayes classifier is predicted and the accuracy is printed.
* Now, the naïve bayes classifier performance is printed.
* Implement the linear support vector classification & train it.
* Now, the performance and the accuracy is printed.
* Then Support vector classifier (SVC) with the radial basis function kernel (RBF) is trained and predicted.
* Now, the performance and accuracy is printed.
* By Comparing both the Naïve Bayes method and the linear SVM method, the accuracy of Naïve Bayes method is more with 55.81%
* This is because as they both are parameter optimization. Naïve bayes treats them as independent, whereas SVM looks at the interactions between them to a certain degree, as long as you’re using a non-linear kernel.

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