**NEURAL NETWORKS ICP-5**

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GITHUBLINK: <https://github.com/sanjanamortha28/ICP5_Spring24>

Video Link:

<https://github.com/sanjanamortha28/ICP5_Spring24/assets/70304377/8d73d358-e112-44d2-bec4-9b255a281b7c>

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)

Code:

A screen shot of a computer program

Description automatically generated

Output:

A screenshot of a computer

Description automatically generated

1. 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)

Code:

A screen shot of a computer

Description automatically generated

Output:A screen shot of a computer

Description automatically generated

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

Based on the provided dataset:

1. Naive Bayes Algorithm: Accuracy Score = 55.81%

2. Linear Support Vector Machine (SVM) Algorithm

: Accuracy Score = 51.16%

In this specific case, the Naive Bayes algorithm achieved a slightly better accuracy compared to the Linear SVM algorithm. This could be because the Naive Bayes algorithm is well-suited for datasets with features that are approximately independent given the class labels. Additionally, Naive Bayes tends to perform well with small to moderate-sized datasets and can handle noisy data effectively.

Therefore, based on the accuracy scores obtained from the provided dataset, the Naive Bayes algorithm appears to be the better choice.