sl-support-vector-mechanism

August 26, 2023

Name : **A.SAIRAM**

Roll : **21X05A6701**

Stream : **DataScience**

College : **Narsimha Reddy Engineering College**

Project Title : Using the Support_Vector_Mechanisam algorithm of Supervise Machine Learning, Predict Iris.csv dataset to find out species will be same or different

Problem Statement : A American based botnical garden grow Iris flowers in their Labs but using biotechnology in single tree different type of variety flowers is grow. As a datascience engineer find out how accuracy is there all categories contains same species.

Task : 1. Preproses the data in Skitlearn library 2. Load the using sklearn model selection default argument 3. On the bases of your data train , test and split your spm model 4. Impliment the Support_Vector_Mechanism using Classificer.The SVM must be "Linear" 5. Train the classifier on the training data 6. Find the prediction value on the test data 7. Test the model with help of accuracy, Accuracy should be live in the range of 0 to 1

[1]:
```
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.svm import SVC
from sklearn.metrics import accuracy_score
```

[2]:
```
# Load the Iris dataset
iris = load_iris()
X = iris.data
y = iris.target
```

[3]:
```
# Consider only two classes for simplicity
X = X[y != 2]
y = y[y != 2]
```

[4]:
```
# Split the dataset into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,␣
↪random_state=42)
```

[5]:
```
# Create an SVM classifier
svm_classifier = SVC(kernel='linear')
```

[6]:
```
# Train the classifier on the training data
svm_classifier.fit(X_train, y_train)
```

[6]:
```
SVC(kernel='linear')
```

[7]:
```
# Make predictions on the test data
y_pred = svm_classifier.predict(X_test)
```

[8]:
```
# Calculate accuracy
accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 1.00
```

Conclusion : According to my support vector mechanism model the species are “Linear”. With accuracy of 1.00. Hence Proved model was successfully Implement