support-vector-mechanism

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0.5 Project Title :

0.5.1 Using the Support Vector Mechanism Algorithm of supervised machine learning, predict iris.csv datasets to find out species will be same od different.

0.6 Problem Statement :

0.6.1 A American waist botnical garden grow iris flower in their labs but using bio technology in a single tree different types of variety flower is grow. As a Data Science Engineer find out how much accuracy is their all categories contains same species.

0.7 Task-1 :

0.7.1 Preprocess with the data in skit.learn library.

0.8 Task-2 :

0.8.1 Load the data using sklearn model selection default arguement.

0.9 Task-3 :

0.9.1 On the basis of datasets train, test, and split SVM model.

0.10 Task-4 :

0.10.1 Implement Support Vector Mechanism Classifier using svm_classifier. The svm must be "Linear".

0.11 Task-5 :

0.11.1 Train the classifier on the training data.

0.12 Task-6 :

0.12.1 Find out the prediction value on the test data.

0.13 Task-7 :

0.13.1 Test the model with the help of accuracy, accuracy should be lie in the range of 0 to 1.

[9]:
```
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
```

[10]:
```
# Load the Iris dataset
iris = load_iris()
```

```
X = iris.data
y = iris.target
```

[11]:
```
# Consider only two classes for simplicity
X = X[y != 2]
y = y[y != 2]
```

[12]:
```
# 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)
```

[13]:
```
# Create an SVM classifier
svm_classifier = SVC(kernel='linear')
```

[14]:
```
# Train the classifier on the training data
svm_classifier.fit(X_train, y_train)
```

[14]:
```
SVC(kernel='linear')
```

[15]:
```
# Make predictions on the test data
y_pred = svm_classifier.predict(X_test)
```

[16]:
```
# Calculate accuracy
accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 1.00
```

0.14 Conclusion :

0.14.1 According to my support vector mechanism model the species or linear. With the accuracy of 1.00.

0.14.2 Hence proved model was successfully implement.