

sl-support-vector-mechanism

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0.1 project title

Using the support vector mechanism algorithm of supervised machine learning, predict iris.csv data set to find out the species will be same or different.

0.2 task

1. preprocess the data in sklearn library
2. load the data using sklearn model selection default argument
3. on the basis of the data train_test_split your svm model
4. implement support vector mechanism classifier svm_classifier. it must be "Linear"
5. train the classifier on the training data
6. find out the prediction value on the test_data
7. test the model with help of accuracy, accuracy should be in the range of 0-1.

```
[2]: 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
```

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

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

```
[5]: # 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)
```

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

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

[7]: SVC(kernel='linear')

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

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

Accuracy: 1.00

0.3 conclusion

according to my support vector mechanism model the spicece are linear.with the accuracy of 1.00.
Hence proved model was successfully implemented

```
[9]:
```