Gudi Varaprasad

19BCE7048

Lab Slot – L1 + L2 + L11 + L12 + L43 + L44

▾ Multiclass Classification with Support Vector Machines

```python
from sklearn.datasets import load_iris
from sklearn.multiclass import OneVsRestClassifier
from sklearn.svm import SVC
from sklearn.metrics import accuracy_score, classification_report
from sklearn.model_selection import train_test_split
import warnings

warnings.filterwarnings('ignore')
```

```python
# Loading the dataset
dataset = load_iris()
X = dataset.data
y = dataset.target
```

```python
# Splitting the dataset into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.1, random_state = 13)
```

```python
# Creating the SVM model
model = OneVsRestClassifier(SVC())

# Fitting the model with training data
model.fit(X_train, y_train)
```

```python
# Making a prediction on the test set
prediction = model.predict(X_test)
```

```python
# Evaluating the model
print(f"Test Set Accuracy : {accuracy_score(y_test, prediction) * 100} %\n\n")

print(f"Classification Report : \n\n{classification_report(y_test, prediction)}")
```

```
Test Set Accuracy : 80.0 %


Classification Report :

              precision    recall  f1-score   support

           0       1.00      1.00      1.00         4
           1       0.57      1.00      0.73         4
           2       1.00      0.57      0.73         7

    accuracy                           0.80        15
   macro avg       0.86      0.86      0.82        15
weighted avg       0.89      0.80      0.80        15
```