

Ex No: 2

Implement A classifier Using Open Sourc.

Aim:

To implement a KNN classifier Using Iris

dataset

Objective:

To analyse the statistical Parameters and Workflow of the algorithm

Pseudo Code /Algorithm:

1. Install and import the libraries.
2. Load dataset
3. Split the data into Training & Test Sets
4. Create the KNN Classifier
5. Train the model
6. Make Prediction

Observation:

In this Iris dataset I used K-Nearest Neighbour algorithm (KNN)

When,

split the data using sklearn
80% train, 20% test.

Normalize features in the dataset.

Spal length - 4.3 to 7.9 (In cm)

Petal length - 1.0 to 6.9 (In cm)

DATA Set:

Iris dataset

Attributes:

1. Sepal length cm

2. Sepal width cm

3. Petal length cm

4. Petal width cm

matrix [Table GX 150 data]

4
col

150
row

Numerical Values in database

Accuracy: 1.00

Classification Report:

	Precision	recall	f1 Score	Support
0	1.00	1.00	1.00	50
1	1.00	1.00	1.00	50
2	1.00	1.00	1.00	50

Accuracy:

macro avg: 1.00 1.00 1.00 45.0

Weighted avg: 1.00 1.00 1.00 45.0

Confusion Matrix:

$$\begin{bmatrix} 50 & 0 & 0 \\ 0 & 50 & 0 \\ 0 & 0 & 50 \end{bmatrix}$$

Note:-

Petal length might dominate because it has a larger range - which rains KNN's decision making

stdn Standard Scalar

- Subtract the mean
- Divide by standard deviation

mean = 0, std dev = 1

Evaluation:-

When K=3

Accuracy: 1.00

Classification Report:

	Precision	Recall	F1-Score
Setosa	1.00	1.00	1.00
Versicolor	1.00	1.00	1.00

→ for K=5, 8, 10, 20

→ Classification Report will be same as K=3

Result:-

Implement a KNN classifier by Iris

dataset.

~~14/10/23~~