ML Application Project

By Eleazar Neamat

This project is a Python-based application built with Streamlit that allows users to perform machine learning classification tasks on datasets like Iris or Tips, featuring data preprocessing, model training, evaluation, and prediction with an interactive interface.

Dataset Selection

Select Dataset

Iris

Loaded Dataset:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5	3.6	1.4	0.2	setosa
5	5.4	3.9	1.7	0.4	setosa
6	4.6	3.4	1.4	0.3	setosa
7	5	3.4	1.5	0.2	setosa
8	4.4	2.9	1.4	0.2	setosa
9	4.9	3.1	1.5	0.1	setosa

Preprocessing

Encoding categorical variables...

Dataset after Encoding:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	0
1	4.9	3	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5	3.6	1.4	0.2	0
5	5.4	3.9	1.7	0.4	0
6	4.6	3.4	1.4	0.3	0
7	5	3.4	1.5	0.2	0
8	4.4	2.9	1.4	0.2	0
9	4.9	3.1	1.5	0.1	0

Feature and Target Selection

Select Features

sepal_length × sepal_width × petal_length × petal_width ×

Select Target Variable

species

Data Splitting

Test Size (%)

20

10 50

Training Set Size: 120 rows

Test Set Size: 30 rows

Model Selection

Select Model

Logistic Regression

Train Model

Make Predictions

Enter value for sepal_length

5.84 − +

Enter value for sepal_width

3.06 − +

Enter value for petal_length

3.76 − +

Enter value for petal_width

1.20 − +

Predict

Prediction Result: versicolor