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import numpy as np
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import
accuracy_score,precision_score,recall_score,f1_score

iris=load_iris()
x,y=iris.data,iris.target

x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.1,random_state=42)

knn=KNeighborsClassifier(n_neighbors=3)

knn.fit(x_train,y_train)

y_pred=knn.predict(x_test)

accuracy=accuracy_score(y_test,y_pred)
precision=precision_score(y_test,y_pred,average='weighted')
recall=recall_score(y_test,y_pred,average='weighted')
f1=f1_score(y_test,y_pred,average='weighted')

print(f"Accuracy: {accuracy:.2f}")
print(f"Precision: {precision:.2f}")
print(f"recall: {recall:.2f}")
print(f"F1-score: {f1:.2f}")

Accuracy: 1.00
Precision: 1.00
recall: 1.00
F1-score: 1.00

Test Size: 0.2
Accuracy: 1.0
Precision: 1.0
Recall: 1.0
F1-score: 1.0

Test Size: 0.3
Accuracy: 1.0
Precision: 1.0
Recall: 1.0
F1-score: 1.0

Test Size: 0.4
Accuracy: 0.98

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Precision: 0.98
Recall: 0.98
F1-score: 0.98

Test Size: 0.5
Accuracy: 0.97
Precision: 0.98
Recall: 0.97
F1-score: 0.97

Test Size: 0.6
Accuracy: 0.96
Precision: 0.96
Recall: 0.96
F1-score: 0.96

Test Size: 0.7
Accuracy: 0.97
Precision: 0.97
Recall: 0.97
F1-score: 0.97

Test Size: 0.8
Accuracy: 0.98
Precision: 0.98
Recall: 0.98
F1-score: 0.98

Test Size: 0.9
Accuracy: 0.96
Precision: 0.97
Recall: 0.96
F1-score: 0.96