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from sklearn.svm import SVC
from sklearn import svm
import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score
from sklearn.metrics import confusion_matrix
from sklearn.metrics import classification_report

X=np.array([[3,4],[1,4],[2,3],[6,-1],[7,-1],[5,-3]])
y=np.array([-1,-1,-1,1,1,1])

l=SVC(C=1e5,kernel='linear')
l.fit(X,y)

print('w= ',l.coef_)
print('b= ',l.intercept_)
print('Indices of support vectors= ',l.support_)
print('Support vectors= ',l.support_vectors_)
print('No. of support vectors from each class= ',l.n_support_)
print('coefficient of support vectors in decision function= ',np.abs(l.dual_coef_))

data=pd.read_csv('/content/glass(For SVM Program).csv')
data.head()

x=data.drop('Type',axis=1)
y=data.Type

x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3)

linear=svm.SVC(kernel='linear')
linear.fit(x_train,y_train)

print(linear.support_vectors_)

print(linear.n_support_)

y_pred=linear.predict(x_test)

print(accuracy_score(y_test,y_pred))

print(confusion_matrix(y_test,y_pred))

print(classification_report(y_test,y_pred))

model1=SVC(kernel='sigmoid')
model2=SVC(kernel='poly')
model3=SVC(kernel='rbf')

model1.fit(x_train,y_train)
model2.fit(x_train,y_train)
model3.fit(x_train,y_train)

y_pred1=model1.predict(x_test)
y_pred2=model2.predict(x_test)
y_pred3=model3.predict(x_test)

print("prediction by model1 ",accuracy_score(y_test,y_pred1))
print("prediction by model2",accuracy_score(y_test,y_pred2))
print("prediction by model3",accuracy_score(y_test,y_pred1))

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+ Code

+ Text

