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import pandas as pd
import numpy as np
from sklearn import preprocessing
from sklearn.naive_bayes import MultinomialNB
from sklearn.metrics import accuracy_score
from sklearn.metrics import classification_report
from sklearn.model_selection import train_test_split
from matplotlib import pyplot
from sklearn import metrics

data = pd.read_csv('/content/covid(For Naive Bayes Program).csv')
data

le = preprocessing.LabelEncoder()
pc_encoded=le.fit_transform(data['pc'].values)
wbc_encoded=le.fit_transform(data['wbc'].values)
mc_encoded=le.fit_transform(data['mc'].values)
ast_encoded=le.fit_transform(data['ast'].values)
bc_encoded=le.fit_transform(data['bc'].values)
ldh_encoded=le.fit_transform(data['ldh'].values)
Y=le.fit_transform(data['diagnosis'].values)

X=np.array(list(zip(pc_encoded,wbc_encoded,mc_encoded,ast_encoded,bc_encoded,ldh_encoded)))
X
Y

model = MultinomialNB()

X_train,X_test,Y_train,Y_test=train_test_split(X,Y,test_size=.8)

model.fit(X_train, Y_train)
y_pred = model.predict(X_test)

print("Accuracy:",accuracy_score(Y_test, y_pred))

print("\nReport")
print(classification_report(Y_test,y_pred))

lr_probs=model.predict_proba(X_test)
lr_probs

lr_probs=lr_probs[:,1]
lr_fpr,lr_tpr,_=metrics.roc_curve(Y_test,lr_probs)
lr_fpr

pyplot.plot(lr_fpr,lr_tpr)
pyplot.xlabel("False +")
pyplot.ylabel("True +")
pyplot.show()

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