%matplotlib inline

import numpy as np

import pandas as pd

from sklearn.tree import DecisionTreeClassifier

from sklearn import tree

from sklearn.model\_selection import train\_test\_split

from sklearn.preprocessing import LabelEncoder

import matplotlib.pyplot as plt

from sklearn import metrics

data=pd.read\_csv('https://gist.githubusercontent.com/bigsnarfdude/515849391ad37fe593997fe0db98afaa/raw/f663366d17b7d05de61a145bbce7b2b961b3b07f/weather.csv')

data

le = LabelEncoder()

data['outlook'] = le.fit\_transform(data['outlook'])

data['temperature'] = le.fit\_transform(data['temperature'])

data['humidity'] = le.fit\_transform(data['humidity'])

data['windy'] = le.fit\_transform(data['windy'])

data['play']=le.fit\_transform(data['play'])

data

X=data[['outlook', 'temperature', 'humidity', 'windy']]

Y=data['play']

model = DecisionTreeClassifier(criterion='gini')

model.fit(X,Y)

plt.figure(figsize=(10,8))

tree.plot\_tree(model, filled=True, feature\_names=['outlook', 'temperature', 'humidity', 'windy'], class\_names=['Yes', 'No'])

plt.show()

Y=Y.reshape(-1,1)

print(Y.shape)

yscore=model.predict\_proba(X)

print(yscore.shape)

FPRs, TPRs, \_ =metrics.roc\_curve(y\_true=Y, y\_score=yscore[:,0])

plt.plot(FPRs, TPRs)

plt.show()