

Source code

```
import pandas as pd

import numpy as np

from sklearn.model_selection import train_test_split

from sklearn.preprocessing import StandardScaler, LabelEncoder

from sklearn.metrics import classification_report, confusion_matrix,
roc_auc_score, roc_curve

from xgboost import XGBClassifier

import matplotlib.pyplot as plt

import seaborn as sns


df = pd.read_csv('Bank Customer Churn Prediction(1).csv')

df.drop('customer_id', axis=1, inplace=True)

label_encoder = LabelEncoder()

df['gender'] = label_encoder.fit_transform(df['gender'])

df = pd.get_dummies(df, columns=['country'], drop_first=True)


X = df.drop('churn', axis=1)

y = df['churn']
```

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X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,
random_state=42)

scaler = StandardScaler()

X_train = scaler.fit_transform(X_train)

X_test = scaler.transform(X_test)


model = XGBClassifier(use_label_encoder=False, eval_metric='logloss')

model.fit(X_train, y_train)

y_pred = model.predict(X_test)

y_proba = model.predict_proba(X_test)[:,:1]


print("Classification Report:")

print(classification_report(y_test, y_pred))

print("Confusion Matrix:")

print(confusion_matrix(y_test, y_pred))

print("ROC AUC Score:", roc_auc_score(y_test, y_proba))


fpr, tpr, _ = roc_curve(y_test, y_proba)

plt.figure(figsize=(8,6))

plt.plot(fpr, tpr, label="XGBoost (AUC = {:.2f})".format(roc_auc_score(y_test,
y_proba)))

plt.plot([0,1], [0,1], 'k--')
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plt.xlabel("False Positive Rate")
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plt.ylabel("True Positive Rate")
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plt.title("ROC Curve")
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```
plt.legend()
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plt.grid()
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```
plt.show()
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