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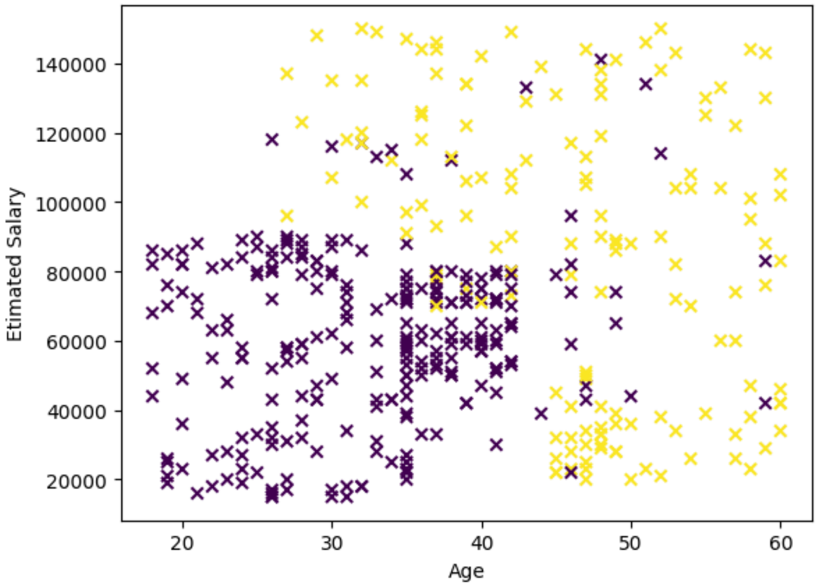
import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
df = pd.read_csv("/content/Social_Network_Ads - Social_Network_Ads.csv")
df.describe()
df['Age'].isna().sum()
df['EstimatedSalary'].isna().sum()
df['Purchased'].isna().sum()
X = df.iloc[:,2:4].values
X.shape
y = df.iloc[:,4].values
y
y.shape
import matplotlib.pyplot as plt
plt.scatter(X[:,0:1],X[:,1:2],c=y,marker='x',)
plt.xlabel('Age')
plt.ylabel('Etimated Salary')
plt.show()
X_train, X_test, y_train, y_test = train_test_split(X,y,test_size = 0.3)
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.fit_transform(X_test)
X_train
from sklearn.svm import SVC
classifier = SVC(kernel = 'linear', random_state=0)
classifier.fit(X_train,y_train)
y_pred = classifier.predict(X_test)
from sklearn.metrics import confusion_matrix, accuracy_score
print(confusion_matrix(y_test,y_pred))
print('Accuracy = ', accuracy_score(y_test,y_pred))
classifier = SVC(kernel = 'poly', random_state=0,degree = 2)
classifier.fit(X_train,y_train)
y_pred = classifier.predict(X_test)
print(confusion_matrix(y_test,y_pred))
print('Accuracy = ', accuracy_score(y_test,y_pred))
classifier = SVC(kernel = 'poly', random_state=0,degree = 3)
classifier.fit(X_train,y_train)
y_pred = classifier.predict(X_test)
print(confusion_matrix(y_test,y_pred))
print('Accuracy = ', accuracy_score(y_test,y_pred))
classifier = SVC(kernel = 'rbf', random_state=0)
classifier.fit(X_train,y_train)
y_pred = classifier.predict(X_test)
print(confusion_matrix(y_test,y_pred))
print('Accuracy = ', accuracy_score(y_test,y_pred))
classifier = SVC(kernel = 'rbf', random_state=0,C=3)
classifier.fit(X_train,y_train)
y_pred = classifier.predict(X_test)
print(confusion_matrix(y_test,y_pred))
print('Accuracy = ', accuracy_score(y_test,y_pred))
```



```
[[68  5]
 [21 26]]
Accuracy =  0.7833333333333333
[[66  7]
 [17 30]]
Accuracy =  0.8
[[70  3]
 [16 31]]
Accuracy =  0.8416666666666667
[[66  7]
 [ 5 42]]
```