SVM2

December 19, 2022

[2]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

[3]:
```
df =pd.read_csv('Social_Network_Ads.csv')
df.head()
```

[3]:

	User ID	Gender	Age	EstimatedSalary	Purchased
0	15624510	Male	19	19000	0
1	15810944	Male	35	20000	0
2	15668575	Female	26	43000	0
3	15603246	Female	27	57000	0
4	15804002	Male	19	76000	0

[4]:
```
df.shape
```

[4]: (400, 5)

[5]:
```
x = df.iloc[:,[2,3]]
y = df.iloc[:,4]
```

[6]:
```
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test = train_test_split(x,y,test_size =0.
↪25,random_state =0)
from sklearn.preprocessing import StandardScaler
```

[7]:
```
print("Training data :",x_train.shape)
print("Training data :",x_test.shape)
```

```
Training data : (300, 2)
Training data : (100, 2)
```

[8]:
```
sc_x = StandardScaler()
x_train = sc_x.fit_transform(x_train)
x_test = sc_x.transform(x_test)
```

[9]:
```
from sklearn.svm import SVC
classifier = SVC(kernel ='linear',random_state=0)
classifier.fit(x_train,y_train)
```

```
y_pred = classifier.predict(x_test)
```

[10]:
```
y_pred
```

[10]:
```
array([0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1,
       0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1,
       0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1,
       0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1], dtype=int64)
```

[11]:
```
from sklearn import metrics
print('Accuracy score: with linear kernel')

print(metrics.accuracy_score(y_test,y_pred))
```

```
Accuracy score: with linear kernel
0.9
```

[12]:
```
from sklearn.svm import SVC
classifier = SVC(kernel = 'rbf',gamma =15,C=7,random_state=0)
classifier.fit(x_train,y_train)

y_pred = classifier.predict(x_test)
```

[13]:
```
print('Accuracy score on Test Data: with default rbf kernel')
print(metrics.accuracy_score(y_test,y_pred))
```

```
Accuracy score on Test Data: with default rbf kernel
0.89
```

[ ]:

[ ]: