Random forest 2

December 18, 2022

[1]:
```
import pandas as pd
import numpy as np
```

[2]:
```
dataset =pd.read_csv("bill_authentication.csv")
```

[3]:
```
dataset.head()
```

[3]:

	Variance	Skewness	Curtosis	Entropy	Class
0	3.62160	8.6661	-2.8073	-0.44699	0
1	4.54590	8.1674	-2.4586	-1.46210	0
2	3.86600	-2.6383	1.9242	0.10645	0
3	3.45660	9.5228	-4.0112	-3.59440	0
4	0.32924	-4.4552	4.5718	-0.98880	0

[4]:
```
x = dataset.iloc[:,0:4].values
y = dataset.iloc[:,4].values
```

[5]:
```
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x,y,test_size=0.
 ↪2,random_state=0)
```

[6]:
```
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
```

[7]:
```
x_train =sc.fit_transform(x_train)
x_test =sc.fit_transform(x_test)
```

[8]:
```
from sklearn.ensemble import RandomForestClassifier
Classifier = RandomForestClassifier(n_estimators=20,random_state=0)
Classifier.fit(x_train, y_train)
y_pred = Classifier.predict(x_test)
```

[9]:
```
from sklearn.metrics import␣
 ↪classification_report,confusion_matrix,accuracy_score
print(confusion_matrix(y_test,y_pred))
print(classification_report(y_test,y_pred))
print(accuracy_score(y_test,y_pred))
```

```
[[153   4]
 [  0 118]]
              precision    recall  f1-score   support

           0       1.00      0.97      0.99       157
           1       0.97      1.00      0.98       118

    accuracy                           0.99       275
   macro avg       0.98      0.99      0.99       275
weighted avg       0.99      0.99      0.99       275

0.9854545454545455
```

[ ]: