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python                                                    EN  Mon 20 Sep | 18:56:23(IST)
IPython console
Console 1/A                                                                  00:03:53

Python 3.8.8 (default, Apr 13 2021, 19:58:26)
Type "copyright", "credits" or "license" for more information.

IPython 7.22.0 -- An enhanced Interactive Python.

Populating the interactive namespace from numpy and matplotlib

These commands were executed:
>>> from __future__ import division
>>> from sympy import *
>>> x, y, z, t = symbols('x y z t')
>>> k, m, n = symbols('k m n', integer=True)
>>> f, g, h = symbols('f g h', cls=Function)

Warning: pylab (numpy and matplotlib) and symbolic math (sympy) are both
enabled at the same time. Some pylab functions are going to be overrided by
the sympy module (e.g. plot)

In [1]: runfile('/home/dhanola/KUBUNTU/PYTHON NOTEBOOK/PATTERN RECOGNITION AND ANOMALY DETECTION/RAHUL DHANOLA_R177219139_500075154_B4_EXPERIMENT NO 6.py', wdir='/home/dhanola/
KUBUNTU/PYTHON NOTEBOOK/PATTERN RECOGNITION AND ANOMALY DETECTION')
train data size: 800
test data size: 200
Linear Regression Model accuracy:  94.5
Decision Tree Model accuracy:  95.5
SVM Model accuracy:  95.5
Random Forest Model accuracy:  97.0
KNN Model accuracy:  97.0
Fitting 5 folds for each of 126 candidates, totalling 630 fits
Best params: {'C': 1, 'gamma': 1, 'kernel': 'rbf'}
Train Result:
================================================
Accuracy Score: 95.43%

------------------------------------------------
CLASSIFICATION REPORT:
                    0           1  accuracy   macro avg  weighted avg
precision    0.957020    0.951567  0.954286    0.954294      0.954301
recall       0.951567    0.957020  0.954286    0.954294      0.954286
f1-score     0.954286    0.954286  0.954286    0.954286      0.954286
support    351.000000  349.000000  0.954286  700.000000    700.000000

------------------------------------------------
Confusion Matrix:
 [[334  17]
```

```
Fitting 5 folds for each of 126 candidates, totalling 630 fits
Best params: {'C': 1, 'gamma': 1, 'kernel': 'rbf'}
Train Result:
================================================
Accuracy Score: 95.43%

------------------------------------------------
CLASSIFICATION REPORT:
                    0           1  accuracy   macro avg  weighted avg
precision    0.957020    0.951567  0.954286    0.954294      0.954301
recall       0.951567    0.957020  0.954286    0.954294      0.954286
f1-score     0.954286    0.954286  0.954286    0.954286      0.954286
support    351.000000  349.000000  0.954286  700.000000    700.000000

------------------------------------------------
Confusion Matrix:
 [[334  17]
 [ 15 334]]

Test Result:
================================================
Accuracy Score: 52.33%

------------------------------------------------
CLASSIFICATION REPORT:
                    0           1  accuracy   macro avg  weighted avg
precision    0.516892    1.000000  0.523333    0.758446      0.753615
recall       1.000000    0.027211  0.523333    0.513605      0.523333
f1-score     0.681514    0.052980  0.523333    0.367247      0.373533
support    153.000000  147.000000  0.523333  300.000000    300.000000

------------------------------------------------
Confusion Matrix:
 [[153   0]
 [143   4]]



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Figures now render in the Plots pane by default. To make them also appear inline in the Console, uncheck "Mute Inline Plotting" under the Plots pane options menu.
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In [2]:
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