ASSIGNMNET(3)-CLASSIFIERS

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Classifiers used

1. Stochastic Gradient Descent Classifier
2. Gaussian Naïve Bayes Classifier
3. Decision Tree Classifier
4. K-Nearest Neighbor Classifier

Parameters

1. Maximum Frequency – 700
2. Minimum Frequency – 4
3. N-gram Range – (1,3)
4. Maximum Features – 75
5. Training Size – 70%

Linear Classifier:

1) Accuracy

Linear Classifier: 0.793939393939394

2) confusion_matrix

array([[6, 0, 22],
    [1, 0, 23],
    [1, 0, 247]], dtype=int64)

3) Percison,recall,fscore

Macro: Percison,recall,fscore (0.4451923663191269, 0.43731168269913656, 0.43847028847028846, None)

Naive Bayes Classifier:

1) Accuracy

Naive Bayes Classifier: 0.5151515151515151

2) confusion_matrix

array([[12, 8, 8],
    [3, 12, 9],
    [36, 67, 145]], dtype=int64)

3) Percison,recall,fscore

Macro: Percison,recall,fscore (0.41199688719515687, 0.4854695352850335, 0.37775020576780743, None)

Decision Tree Classifier:

1) Accuracy

Decision Tree Classifier: 0.7515151515151515

2) confusion_matrix

```
array([[ 12,  8,  8],
    [ 3,  12,  9],
    [ 36,  67, 145]], dtype=int64)
```

3) Percison,recall,fscore

Macro: Percison,recall,fscore (0.41951775822743564, 0.4090395326557688, 0.4134632034632035, None)

KNN Classifier:

1) Accuracy

KNN Classifier: 0.8090909090909091

2) confusion_matrix

```
array([[ 5,  0, 23],
    [ 3,  1, 20],
    [ 7,  4, 237]], dtype=int64)
```

3) Percison,recall,fscore

Macro: Percison,recall,fscore (0.5522222222222223, 0.430773275791726, 0.4486568235869574, None)