Classification Report 2022-09-02 21:15:16.131081

## Model : lr\_Classifier

Accuracy\_score : 75.65 %

Loss : 24.35 %

Hamming\_loss : 6.27 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.77 0.66 0.71 319  
 1 0.60 0.48 0.54 164  
 2 0.88 0.93 0.90 162  
 3 0.90 0.95 0.92 38  
 4 0.87 0.93 0.90 243  
  
 micro avg 0.80 0.76 0.78 926  
 macro avg 0.80 0.79 0.79 926  
weighted avg 0.79 0.76 0.77 926  
 samples avg 0.32 0.31 0.31 926

File saved : MultiLabelModel\_lr\_Classifier.pkl

data : {'Accuracy': 75.65, 'Loss': 24.35, 'Hamming\_loss': 6.27, 'Model\_name': 'lr\_Classifier', 'Filename': 'MultiLabelModel\_lr\_Classifier.pkl'}

## Model : knn\_Classifier

Accuracy\_score : 81.56 %

Loss : 18.44 %

Hamming\_loss : 5.09 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.79 0.72 0.75 319  
 1 0.74 0.80 0.77 164  
 2 0.92 0.91 0.92 162  
 3 0.80 0.32 0.45 38  
 4 0.88 0.97 0.93 243  
  
 micro avg 0.83 0.82 0.82 926  
 macro avg 0.83 0.74 0.76 926  
weighted avg 0.83 0.82 0.82 926  
 samples avg 0.34 0.34 0.33 926

File saved : MultiLabelModel\_knn\_Classifier.pkl

data : {'Accuracy': 81.56, 'Loss': 18.44, 'Hamming\_loss': 5.09, 'Model\_name': 'knn\_Classifier', 'Filename': 'MultiLabelModel\_knn\_Classifier.pkl'}

## Model : nb\_Classifier

Accuracy\_score : 62.33 %

Loss : 37.67 %

Hamming\_loss : 15.92 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.51 0.71 0.60 319  
 1 0.37 0.87 0.52 164  
 2 0.54 1.00 0.70 162  
 3 0.15 0.87 0.26 38  
 4 0.69 1.00 0.82 243  
  
 micro avg 0.48 0.87 0.62 926  
 macro avg 0.45 0.89 0.58 926  
weighted avg 0.52 0.87 0.64 926  
 samples avg 0.20 0.34 0.24 926

File saved : MultiLabelModel\_nb\_Classifier.pkl

data : {'Accuracy': 62.33, 'Loss': 37.67, 'Hamming\_loss': 15.92, 'Model\_name': 'nb\_Classifier', 'Filename': 'MultiLabelModel\_nb\_Classifier.pkl'}

## Model : svm\_Classifier

Accuracy\_score : 62.1 %

Loss : 37.9 %

Hamming\_loss : 12.58 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.88 0.12 0.21 319  
 1 1.00 0.10 0.19 164  
 2 1.00 0.11 0.20 162  
 3 0.00 0.00 0.00 38  
 4 1.00 0.25 0.40 243  
  
 micro avg 0.96 0.14 0.25 926  
 macro avg 0.78 0.12 0.20 926  
weighted avg 0.92 0.14 0.24 926  
 samples avg 0.07 0.06 0.06 926

File saved : MultiLabelModel\_svm\_Classifier.pkl

data : {'Accuracy': 62.1, 'Loss': 37.9, 'Hamming\_loss': 12.58, 'Model\_name': 'svm\_Classifier', 'Filename': 'MultiLabelModel\_svm\_Classifier.pkl'}

## Model : dt\_Classifier

Accuracy\_score : 94.96 %

Loss : 5.04 %

Hamming\_loss : 1.12 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.96 0.97 0.96 319  
 1 0.87 0.95 0.91 164  
 2 0.96 1.00 0.98 162  
 3 0.92 0.95 0.94 38  
 4 0.99 1.00 0.99 243  
  
 micro avg 0.95 0.98 0.96 926  
 macro avg 0.94 0.97 0.96 926  
weighted avg 0.95 0.98 0.96 926  
 samples avg 0.40 0.41 0.40 926

File saved : MultiLabelModel\_dt\_Classifier.pkl

data : {'Accuracy': 94.96, 'Loss': 5.04, 'Hamming\_loss': 1.12, 'Model\_name': 'dt\_Classifier', 'Filename': 'MultiLabelModel\_dt\_Classifier.pkl'}

## Model : rf\_Classifier

Accuracy\_score : 96.45 %

Loss : 3.55 %

Hamming\_loss : 0.74 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.97 0.99 0.98 319  
 1 0.93 0.95 0.94 164  
 2 0.96 1.00 0.98 162  
 3 0.97 0.92 0.95 38  
 4 1.00 0.99 0.99 243  
  
 micro avg 0.97 0.98 0.97 926  
 macro avg 0.97 0.97 0.97 926  
weighted avg 0.97 0.98 0.97 926  
 samples avg 0.41 0.41 0.41 926

File saved : MultiLabelModel\_rf\_Classifier.pkl

data : {'Accuracy': 96.45, 'Loss': 3.55, 'Hamming\_loss': 0.74, 'Model\_name': 'rf\_Classifier', 'Filename': 'MultiLabelModel\_rf\_Classifier.pkl'}

## Model : gb\_Classifier

Accuracy\_score : 97.08 %

Loss : 2.92 %

Hamming\_loss : 0.61 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.97 0.99 0.98 319  
 1 0.92 0.96 0.94 164  
 2 0.99 1.00 0.99 162  
 3 1.00 0.95 0.97 38  
 4 1.00 1.00 1.00 243  
  
 micro avg 0.97 0.99 0.98 926  
 macro avg 0.97 0.98 0.98 926  
weighted avg 0.97 0.99 0.98 926  
 samples avg 0.41 0.41 0.41 926

File saved : MultiLabelModel\_gb\_Classifier.pkl

data : {'Accuracy': 97.08, 'Loss': 2.92, 'Hamming\_loss': 0.61, 'Model\_name': 'gb\_Classifier', 'Filename': 'MultiLabelModel\_gb\_Classifier.pkl'}

## Model : ab\_Classifier

Accuracy\_score : 95.51 %

Loss : 4.49 %

Hamming\_loss : 0.93 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.96 0.97 0.96 319  
 1 0.89 0.95 0.92 164  
 2 0.97 1.00 0.98 162  
 3 0.93 1.00 0.96 38  
 4 1.00 1.00 1.00 243  
  
 micro avg 0.96 0.98 0.97 926  
 macro avg 0.95 0.98 0.97 926  
weighted avg 0.96 0.98 0.97 926  
 samples avg 0.40 0.41 0.41 926

File saved : MultiLabelModel\_ab\_Classifier.pkl

data : {'Accuracy': 95.51, 'Loss': 4.49, 'Hamming\_loss': 0.93, 'Model\_name': 'ab\_Classifier', 'Filename': 'MultiLabelModel\_ab\_Classifier.pkl'}