Classification Report 2022-06-15 14:54:26.660135

## Model : lr\_Classifier

Accuracy\_score : 72.42 %

Loss : 27.58 %

Hamming\_loss : 7.38 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.72 0.60 0.66 319  
 1 0.39 0.18 0.24 164  
 2 0.89 0.91 0.90 162  
 3 1.00 0.95 0.97 38  
 4 0.87 0.92 0.90 243  
  
 micro avg 0.79 0.68 0.73 926  
 macro avg 0.78 0.71 0.73 926  
weighted avg 0.74 0.68 0.70 926  
 samples avg 0.29 0.28 0.27 926

File saved : MultiLabelModel\_lr\_Classifier.pkl

data : {'Accuracy': 72.42, 'Loss': 27.58, 'Hamming\_loss': 7.38, 'Model\_name': 'lr\_Classifier', 'Filename': 'MultiLabelModel\_lr\_Classifier.pkl'}

## Model : knn\_Classifier

Accuracy\_score : 84.16 %

Loss : 15.84 %

Hamming\_loss : 3.97 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.81 0.71 0.76 319  
 1 0.79 0.90 0.84 164  
 2 0.95 0.97 0.96 162  
 3 0.89 0.66 0.76 38  
 4 0.93 0.98 0.96 243  
  
 micro avg 0.87 0.86 0.86 926  
 macro avg 0.88 0.84 0.85 926  
weighted avg 0.87 0.86 0.86 926  
 samples avg 0.34 0.34 0.34 926

File saved : MultiLabelModel\_knn\_Classifier.pkl

data : {'Accuracy': 84.16, 'Loss': 15.84, 'Hamming\_loss': 3.97, 'Model\_name': 'knn\_Classifier', 'Filename': 'MultiLabelModel\_knn\_Classifier.pkl'}

## Model : nb\_Classifier

Accuracy\_score : 62.57 %

Loss : 37.43 %

Hamming\_loss : 14.56 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.48 0.67 0.56 319  
 1 0.37 0.82 0.51 164  
 2 0.60 0.99 0.75 162  
 3 0.24 0.89 0.38 38  
 4 0.72 0.96 0.82 243  
  
 micro avg 0.50 0.84 0.63 926  
 macro avg 0.48 0.87 0.60 926  
weighted avg 0.53 0.84 0.64 926  
 samples avg 0.20 0.33 0.23 926

File saved : MultiLabelModel\_nb\_Classifier.pkl

data : {'Accuracy': 62.57, 'Loss': 37.43, 'Hamming\_loss': 14.56, 'Model\_name': 'nb\_Classifier', 'Filename': 'MultiLabelModel\_nb\_Classifier.pkl'}

## Model : svm\_Classifier

Accuracy\_score : 78.57 %

Loss : 21.43 %

Hamming\_loss : 5.99 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.86 0.59 0.70 319  
 1 0.84 0.61 0.71 164  
 2 0.99 0.72 0.83 162  
 3 1.00 0.03 0.05 38  
 4 0.97 0.82 0.89 243  
  
 micro avg 0.91 0.65 0.76 926  
 macro avg 0.93 0.55 0.63 926  
weighted avg 0.91 0.65 0.75 926  
 samples avg 0.28 0.27 0.27 926

File saved : MultiLabelModel\_svm\_Classifier.pkl

data : {'Accuracy': 78.57, 'Loss': 21.43, 'Hamming\_loss': 5.99, 'Model\_name': 'svm\_Classifier', 'Filename': 'MultiLabelModel\_svm\_Classifier.pkl'}

## Model : dt\_Classifier

Accuracy\_score : 92.91 %

Loss : 7.09 %

Hamming\_loss : 1.58 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.91 0.97 0.94 319  
 1 0.89 0.88 0.89 164  
 2 0.94 1.00 0.97 162  
 3 0.88 0.95 0.91 38  
 4 0.98 1.00 0.99 243  
  
 micro avg 0.93 0.97 0.95 926  
 macro avg 0.92 0.96 0.94 926  
weighted avg 0.93 0.97 0.95 926  
 samples avg 0.40 0.41 0.40 926

File saved : MultiLabelModel\_dt\_Classifier.pkl

data : {'Accuracy': 92.91, 'Loss': 7.09, 'Hamming\_loss': 1.58, 'Model\_name': 'dt\_Classifier', 'Filename': 'MultiLabelModel\_dt\_Classifier.pkl'}

## Model : rf\_Classifier

Accuracy\_score : 95.82 %

Loss : 4.18 %

Hamming\_loss : 0.88 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.96 0.98 0.97 319  
 1 0.91 0.95 0.93 164  
 2 0.96 1.00 0.98 162  
 3 1.00 0.92 0.96 38  
 4 0.99 1.00 0.99 243  
  
 micro avg 0.96 0.98 0.97 926  
 macro avg 0.97 0.97 0.97 926  
weighted avg 0.96 0.98 0.97 926  
 samples avg 0.41 0.41 0.41 926

File saved : MultiLabelModel\_rf\_Classifier.pkl

data : {'Accuracy': 95.82, 'Loss': 4.18, 'Hamming\_loss': 0.88, 'Model\_name': 'rf\_Classifier', 'Filename': 'MultiLabelModel\_rf\_Classifier.pkl'}

## Model : gb\_Classifier

Accuracy\_score : 95.74 %

Loss : 4.26 %

Hamming\_loss : 0.99 %

Classification\_report :   
 precision recall f1-score support  
  
 0 0.96 0.97 0.96 319  
 1 0.88 0.95 0.91 164  
 2 0.98 1.00 0.99 162  
 3 1.00 0.95 0.97 38  
 4 0.99 1.00 0.99 243  
  
 micro avg 0.95 0.98 0.97 926  
 macro avg 0.96 0.97 0.97 926  
weighted avg 0.96 0.98 0.97 926  
 samples avg 0.40 0.41 0.40 926

File saved : MultiLabelModel\_gb\_Classifier.pkl

data : {'Accuracy': 95.74, 'Loss': 4.26, 'Hamming\_loss': 0.99, 'Model\_name': 'gb\_Classifier', 'Filename': 'MultiLabelModel\_gb\_Classifier.pkl'}

## Model : ab\_Classifier

Accuracy\_score : 95.35 %

Loss : 4.65 %

Hamming\_loss : 1.06 %

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

File saved : MultiLabelModel\_ab\_Classifier.pkl

data : {'Accuracy': 95.35, 'Loss': 4.65, 'Hamming\_loss': 1.06, 'Model\_name': 'ab\_Classifier', 'Filename': 'MultiLabelModel\_ab\_Classifier.pkl'}