Machine Learning Classifier Accuracies

**TF-IDF**

Gaussian NB

Best parameters: feature selection: chi-squared, k = 50

Accuracy: 0.7489

F1 score: 0.6431

Multinomial NB

Best parameters: feature selection: chi-squared, k = 20000

Accuracy: 0.8310

F1 score: 0.7799

Precision: 0.8919

Recall: 0.6927

Logistic Regression

Best parameters: feature selection: chi-squared, k = 20000, C = 1, solver = saga

Accuracy: 0.8669

F1 score: 0.8403

Support Vector Machine

Best parameters: feature selection: chi-squared, k = 10000, C = 1, kernel = linear

Accuracy: 08744

F1 score: 0.8495

Precision: 0.8820

Recall: 0.8193

**GloVe**

Logistic Regression

Best parameters: C = 1, solver = ‘liblinear’

Accuracy score: 0.7633

F1 score = 0.7144

Support Vector Machine

Best parameters: C = 1, kernel = ‘poly’

Accuracy score: 0.7712

F1 score = 0.7230

Precision: 0.7662

Recall: 0.6845

**Doc2Vec**

Logistic Regression

Best parameters: C = 1, solver = ‘saga

Accuracy score = 0.7522

F1 Score = 0.7082

Support Vector Machine

Best parameters: C = 1, solver = ‘rbf’

Accuracy score = 0.7796

F1 Score = 0.7476

Precision: 0.7425

Recall: 0.7539