|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Feature Sets | | | | | |
| Classifiers | Evaluation Metrics | TF-IDF | Unigram + Bigram | Bigram | Trigram | Bigram+  TF-IDF | Trigram+  TF-IDF |
| Naïve Bayes | Accuracy | 0.530 | 0.627 |  |  |  |  |
| Precision | 0.758 | 0.726 |  |  |  |  |
| Recall | 0.235 | 0.535 |  |  |  |  |
| F1 score | 0.358 | 0.616 |  |  |  |  |
| SVM | Accuracy | 0.669 | 0.722 |  |  |  |  |
| Precision | 0.674 | 0.769 |  |  |  |  |
| Recall | 0.727 | 0.677 |  |  |  |  |
| F1 score | 0.699 | 0.720 |  |  |  |  |
| Random Forest | Accuracy | 0.657 | 0.656 |  |  |  |  |
| Precision | 0.711 | 0.718 |  |  |  |  |
| Recall | 0.593 | 0.576 |  |  |  |  |
| F1 score | 0.647 | 0.639 |  |  |  |  |
| Decision Tree | Accuracy | 0.630 | 0.635 |  |  |  |  |
| Precision | 0.687 | 0.696 |  |  |  |  |
| Recall | 0.622 | 0.617 |  |  |  |  |
| F1 score | 0.653 | 0.654 |  |  |  |  |
| Adaboost | Accuracy | 0.613 | 0.627 |  |  |  |  |
| Precision | 0.582 | 0.663 |  |  |  |  |
| Recall | 0.909 | 0.607 |  |  |  |  |
| F1 score | 0.709 | 0.634 |  |  |  |  |
| Gradient Boosting | Accuracy | 0.678 | 0.694 |  |  |  |  |
| Precision | 0.711 | 0.715 |  |  |  |  |
| Recall | 0.685 | 0.716 |  |  |  |  |
| F1 score | 0.698 | 0.716 |  |  |  |  |

Table1: Result table for Train Test ratio 80:20

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Feature Sets | | | | | |
| Classifiers | Evaluation Metrics | TF-IDF | Unigram+Bigram | Bigram | Trigram | Bigram+  TF-IDF | Trigram+  TF-IDF |
| Naïve Bayes | Accuracy | 0.540 |  |  |  |  |  |
| Precision | 0.755 |  |  |  |  |  |
| Recall | 0.188 |  |  |  |  |  |
| F1 score | 0.300 |  |  |  |  |  |
| SVM | Accuracy | 0.687 |  |  |  |  |  |
| Precision | 0.692 |  |  |  |  |  |
| Recall | 0.732 |  |  |  |  |  |
| F1 score | 0.711 |  |  |  |  |  |
| Random Forest | Accuracy | 0.689 |  |  |  |  |  |
| Precision | 0.728 |  |  |  |  |  |
| Recall | 0.655 |  |  |  |  |  |
| F1 score | 0.689 |  |  |  |  |  |
| Decision Tree | Accuracy | 0.646 |  |  |  |  |  |
| Precision | 0.675 |  |  |  |  |  |
| Recall | 0.635 |  |  |  |  |  |
| F1 score | 0.654 |  |  |  |  |  |
| Adaboost | Accuracy | 0.639 |  |  |  |  |  |
| Precision | 0.641 |  |  |  |  |  |
| Recall | 0.741 |  |  |  |  |  |
| F1 score | 0.683 |  |  |  |  |  |
| Gradient Boosting | Accuracy | 0.684 |  |  |  |  |  |
| Precision | 0.696 |  |  |  |  |  |
| Recall | 0.718 |  |  |  |  |  |
| F1 score | 0.706 |  |  |  |  |  |

Table2: Result table for 10-fold cross validation