|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | Feature Sets | | | |
| Classifiers | Evaluation Metrics | TF-IDF | Unigram + Bigram | Bag of words | Bigram + Trigram |
| Naïve Bayes | Accuracy | 0.530 | 0.627 | 0.510 | 0.642 |
| Precision | 0.758 | 0.726 | 0.748 | 0.738 |
| Recall | 0.235 | 0.535 | 0.188 | 0.556 |
| F1 score | 0.358 | 0.616 | 0.300 | 0.635 |
| SVM | Accuracy | 0.669 | **0.722** | 0.664 | 0.650 |
| Precision | 0.674 | 0.769 | 0.695 | 0.739 |
| Recall | 0.727 | 0.677 | 0.650 | 0.521 |
| F1 score | 0.699 | 0.720 | 0.672 | 0.611 |
| Random Forest | Accuracy | 0.657 | 0.656 | 0.661 | 0.613 |
| Precision | 0.711 | 0.718 | 0.716 | 0.701 |
| Recall | 0.593 | 0.576 | 0.596 | 0.467 |
| F1 score | 0.647 | 0.639 | 0.650 | 0.560 |
| Decision Tree | Accuracy | 0.630 | 0.635 | 0.643 | 0.631 |
| Precision | 0.687 | 0.696 | 0.705 | 0.739 |
| Recall | 0.622 | 0.617 | 0.622 | 0.526 |
| F1 score | 0.653 | 0.654 | 0.661 | 0.615 |
| Adaboost | Accuracy | 0.613 | 0.627 | 0.617 | 0.538 |
| Precision | 0.582 | 0.663 | 0.609 | 0.755 |
| Recall | 0.909 | 0.607 | 0.666 | 0.254 |
| F1 score | 0.709 | 0.634 | 0.636 | 0.380 |
| Gradient Boosting | Accuracy | 0.678 | 0.694 | 0.655 | 0.597 |
| Precision | 0.711 | 0.715 | 0.643 | 0.756 |
| Recall | 0.685 | 0.716 | 0.718 | 0.382 |
| F1 score | 0.698 | 0.716 | 0.678 | 0.507 |

Table1: Result table for Train Test ratio 80:20

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | Feature Sets | | | |
| Classifiers | Evaluation Metrics | TF-IDF | Unigram + Bigram | Bag of words | Bigram + Trigram |
| Naïve Bayes | Accuracy | 0.540 | 0.672 | 0.528 | 0.678 |
| Precision | 0.755 | 0.750 | 0.747 | 0.748 |
| Recall | 0.188 | 0.565 | 0.157 | 0.588 |
| F1 score | 0.300 | 0.644 | 0.258 | 0.658 |
| SVM | Accuracy | 0.687 | **0.728** | 0.686 |  |
| Precision | 0.692 | 0.769 | 0.719 |  |
| Recall | 0.732 | 0.694 | 0.665 |  |
| F1 score | 0.711 | 0.729 | 0.690 |  |
| Random Forest | Accuracy | 0.689 | 0.684 | 0.686 | 0.649 |
| Precision | 0.728 | 0.747 | 0.737 | 0.745 |
| Recall | 0.655 | 0.609 | 0.629 | 0.509 |
| F1 score | 0.689 | 0.669 | 0.678 | 0.604 |
| Decision Tree | Accuracy | 0.646 | 0.660 | 0.654 | 0.667 |
| Precision | 0.675 | 0.700 | 0.686 | 0.738 |
| Recall | 0.635 | 0.622 | 0.635 | 0.575 |
| F1 score | 0.654 | 0.659 | 0.659 | 0.646 |
| Adaboost | Accuracy | 0.639 | 0.644 | 0.645 |  |
| Precision | 0.641 | 0.664 | 0.664 |  |
| Recall | 0.741 | 0.658 | 0.661 |  |
| F1 score | 0.683 | 0.661 | 0.662 |  |
| Gradient Boosting | Accuracy | 0.684 | 0.686 | 0.681 |  |
| Precision | 0.696 | 0.702 | 0.706 |  |
| Recall | 0.718 | 0.690 | 0.679 |  |
| F1 score | 0.706 | 0.698 | 0.688 |  |

Table2: Result table for 10-fold cross validation