**Raunak Patil**

**RESULTS**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **Test** | **Train** | **Precision** | | **Recall** | | **Accuracy** | **F1** | |
| Bernoulli NB (a=0) + CV | 77.08 | 97.73 | 76.85 | 77.32 | 77.67 | 76.50 | 77.08 | 77.25 | 76.91 |
| Bernoulli NB (a=0.7) + CV | 85.48 | 93.00 | 83.48 | 87.76 | 88.56 | 82.40 | 85.48 | 85.94 | 84.99 |
| Bernoulli NB (a=0.7) + CV | 85.24 | 89.34 | 82.69 | 88.28 | 89.27 | 81.23 | 85.26 | 85.85 | 84.61 |
| Multinomial NB (a=0) +CV | 77.82 | 97.74 | 77.71 | 77.92 | 78.14 | 77.49 | 77.82 | 77.92 | 77.71 |
| Multinomial NB (a=1.6) +CV | 85.63 | 91.43 | 84.02 | 87.41 | 88.07 | 83.17 | 85.63 | 86.00 | 85.24 |
| Multinomial NB (a=2) + CV | 85.60 | 91.08 | 83.97 | 87.40 | 88.07 | 83.11 | 85.60 | 85.97 | 85.20 |
| Bernoulli NB (a=5) + TFIDF | 87.83 | 98.53 | 83.97 | 87.40 | 88.07 | 83.11 | 85.60 | 85.97 | 85.20 |
| Multinomial NB (a=2) +TFIDF | 87.99 | 97.52 | 83.97 | 87.40 | 88.07 | 83.11 | 85.60 | 85.97 | 85.20 |
| Bernoulli NB (a=0.3) + TFIDF | 88.22 | 99.99 | 83.97 | 87.40 | 88.07 | 83.11 | 85.60 | 85.97 | 85.20 |
| Logistic Regression |  |  |  |  |  |  |  | 89.00 |  |

|  |  |  |
| --- | --- | --- |
| Classifier | Train Score | Test Score |
| SVM Linear + TFIDF | 96.86 | 89.46 |
| SVM Linear + BOG | 99.99 | 86.34 |
| SVM RBF + TFIDF | 50.18 | 49.82 |
| SVM RBF + BOG | 54.5 | 54.35 |
| SVM Sigmoid + TFIDF | 50.23 | 49.76 |
| SVM Sigmoid + BOG | 50.37 | 49.96 |
| SVM Poly + TFIDF | 50.01 | 49.98 |
| SVM Poly + BOG | 50.16 | 49.83 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | Test | Train | Precision | | Recall | | Accuracy | F1 | |
| Random Forest + TFIDF |  |  | 84.07 | 78.5 | 76.62 | 85.46 | 81.04 | 80.17 | 81.83 |
| Random Forest + CV |  |  | 86.28 | 79.29 | 77.40 | 87.55 | 82.48 | 81.60 | 83.22 |
| Random Forest + Ngram=1,1 |  |  | 84.07 | 80.83 | 79.32 | 84.94 | 82.12 | 81.63 | 82.60 |
| Gradient Boost Classifier(a=0.5, n\_estimators=50 | 70.60 | 73.62 | 80.89 | 65.41 | 54.11 | 87.16 | 70.60 | 64.84 | 74.73 |