Analysis of Twitter Data to Evaluate Women's Safety and Inclusion in the Society 👫

- 📄 Sentiment Analyzer
- 🎞 Data Analysis
- 🖼 **Visualization**

Visualization of Models

I. Naive Bayes Classifier
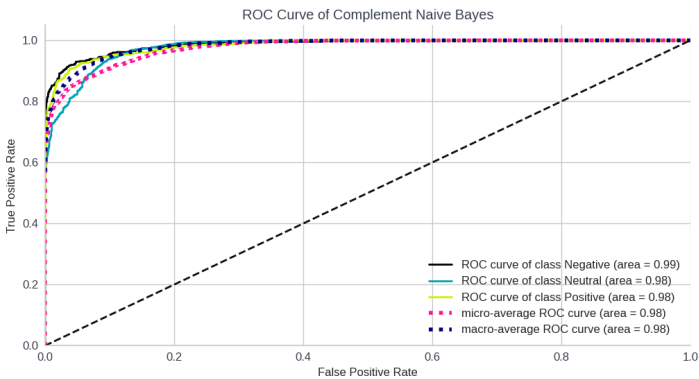
Select type of Naive Bayes Classifier 👇

- 🔘 Complement NB
- ◯ Multinomial NB
- ◯ Bernoulli NB

Classification Report

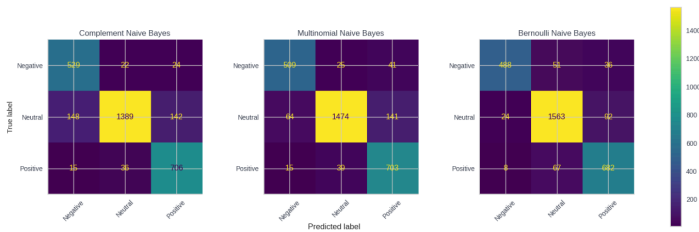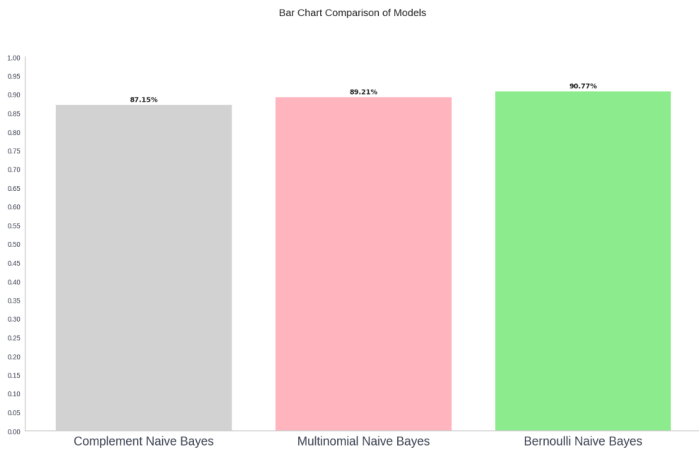## ROC Curve

ROC Curve of Complement Naive Bayes

- ROC curve of class Negative (area = 0.99)
- ROC curve of class Neutral (area = 0.98)
- ROC curve of class Positive (area = 0.98)
- micro-average ROC curve (area = 0.98)
- macro-average ROC curve (area = 0.98)

Visualization Metrics of all Classifiers

Confusion Matrix

	Complement Naive Bayes	Multinomial Naive Bayes	Bernoulli Naive Bayes

Complement Naive Bayes:
- Negative: 529, 25, 94
- Neutral: 148, 1389, 142
- Positive: 15, 36, 716

Multinomial Naive Bayes:
- Negative: 509, 35, 41
- Neutral: 64, 1474, 141
- Positive: 15, 39, 703

Bernoulli Naive Bayes:
- Negative: 488, 63, 36
- Neutral: 24, 1563, 62
- Positive: 8, 67, 682

Accuracy Comparision Graph

Bar Chart Comparison of Models

- Complement Naive Bayes: 87.15%
- Multinomial Naive Bayes: 89.21%
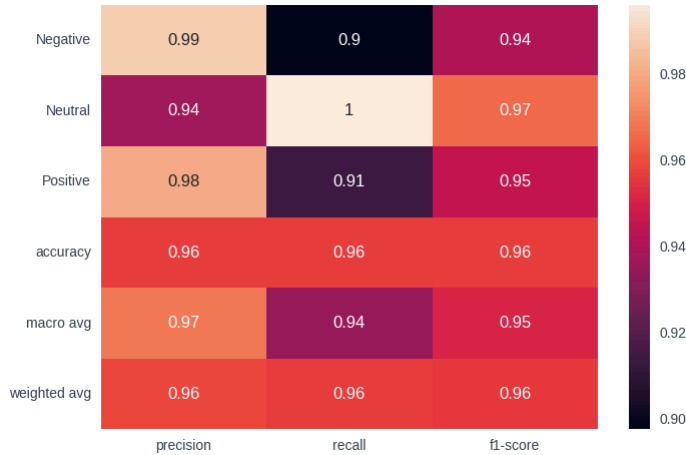- Bernoulli Naive Bayes: 90.77%

II. Additional Classifiers
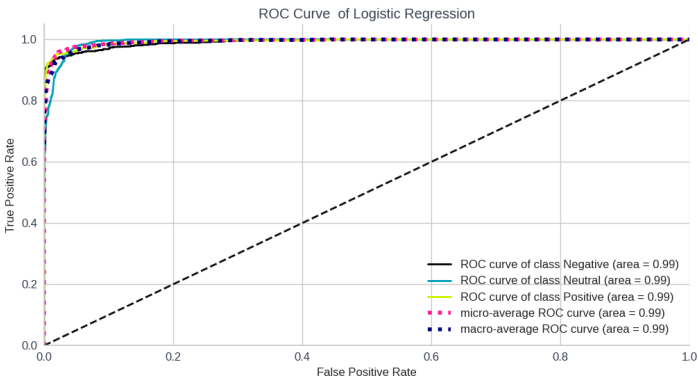
Select the type of Classifier 👇

- 🔘 Logistic Regression
- ⚪ Random Forest
- ⚪ Support Vector Machine
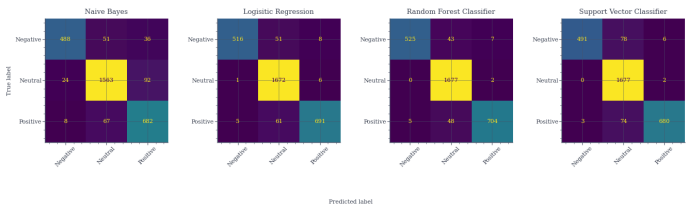
Classification Report

	precision	recall	f1-score
Negative	0.99	0.9	0.94
Neutral	0.94	1	0.97
Positive	0.98	0.91	0.95
accuracy	0.96	0.96	0.96
macro avg	0.97	0.94	0.95
weighted avg	0.96	0.96	0.96

ROC Curve

ROC Curve of Logistic Regression

ROC curve of class Negative (area = 0.99)
ROC curve of class Neutral (area = 0.99)
ROC curve of class Positive (area = 0.99)
micro-average ROC curve (area = 0.99)
macro-average ROC curve (area = 0.99)

Visualization Metrics of all Classifiers

Confusion Matrix

Accuracy Comparision Graph

Bar Chart Comparison of Models