

Thank you!



Any questions?

In Sarcasm, Everything is Upside Down.



Action Item: Document



Sarcastic?
Flip!



Sincere?
Keep!



Results

Model	Max ngrams	All lowercase	News included	Accuracy score	F1 score
Naïve Bayes	1	no	yes	0.733	0.725
SVM	1	no	yes	0.707	0.706
SVM	5	no	yes	0.701	0.7
SVM	3	yes	yes	0.701	0.698
Naïve Bayes	3	yes	yes	0.698	0.698
SVM	3	no	yes	0.693	0.692
Naïve Bayes	3	no	yes	0.684	0.684
Naïve Bayes	5	no	yes	0.676	0.677
Naïve Bayes	3	no	no	0.669	0.672
SVM	1	no	no	0.669	0.672

Feature Importance

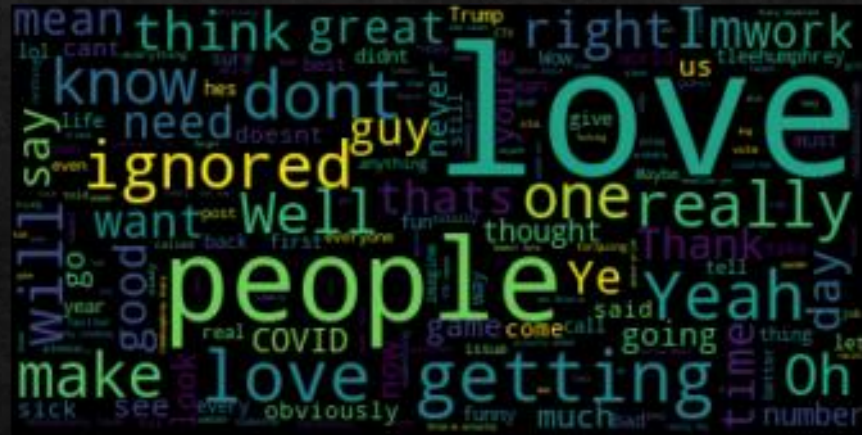
Most sarcastic

1. thats
2. anita
3. having
4. said
5. sure

Most sincere

1. Covid
2. breaking
3. business
4. If
5. More

Word Clouds



Sarcastic



Sincere

Models Used

GAUSSIAN
NAIVE BAYES CLASSIFIER

"Gaussian" because this is a normal distribution

This is our prior belief

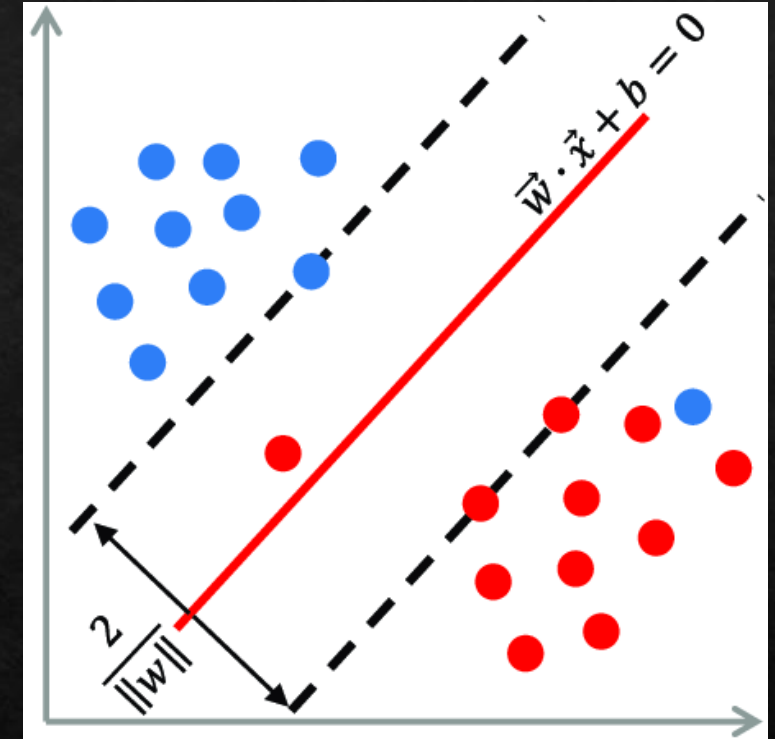
$$p(\text{class} | \text{data}) = \frac{p(\text{data} | \text{class}) \times p(\text{class})}{p(\text{data})}$$

We don't calculate this in naive bayes classifiers

ChrisAlbon

Naïve Bayes

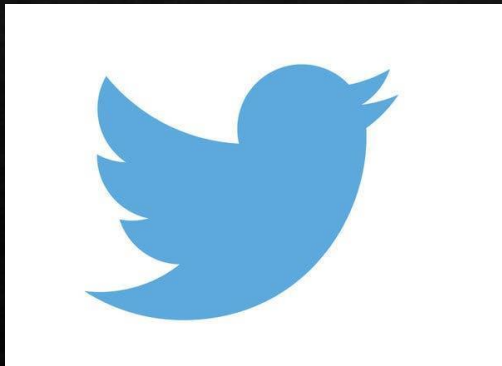
Accuracy: 0.73



SVM

Accuracy: 0.71

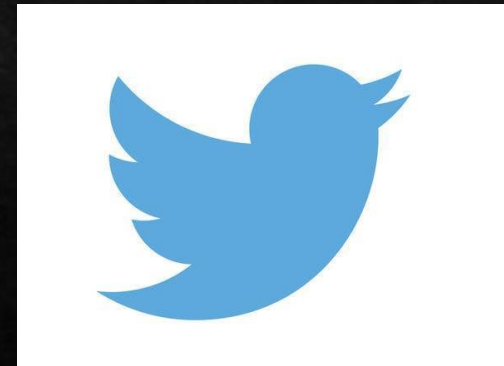
Data Sources



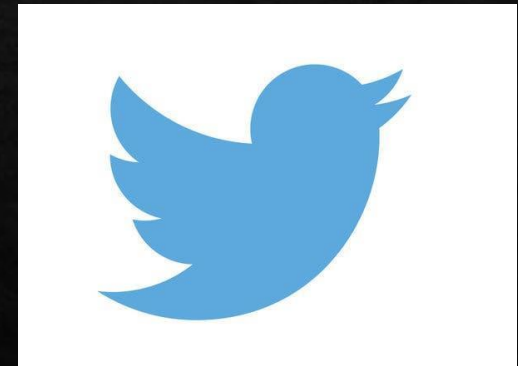
1,000 tweets



2,000 comments



1,000 tweets
#news



1,000 tweets
#sarcastic

Why Are We Doing This?



A Little Recap From
11/09

Just a Normal Sentiment Analysis



Now, Let's Play!



Sarcastic

OR



Sincere

Document 1

love have emotional break downs in the middle of the night

Sarcastic OR Sincere?

love have emotional break downs in the middle of the night



Model says...

Sarcastic OR Sincere?

love have emotional break downs in the middle of the night



Model says...
Sarcastic

Sarcastic OR **Sincere?**

love have emotional break downs in the middle of the night



Model says...

Sarcastic

Ground truth...

Sarcastic OR **Sincere?**

love have emotional break downs in the middle of the night



Model says...

Sarcastic

Ground truth...

Sarcastic

Sarcastic OR **Sincere?**

Document 2

No scones are always sweet more crumbly and served with coffee as part of continental breakfast

Sarcastic OR Sincere?

No scones are always sweet more crumbly and served with coffee as part of continental breakfast



Model says...

Sarcastic OR Sincere?

No scones are always sweet more crumbly and served with coffee as part of continental breakfast



Model says...
Sincere

Sarcastic OR Sincere?

No scones are always sweet more crumbly and served with coffee as part of continental breakfast



Model says...

Sincere

Ground truth...

Sarcastic OR Sincere?

No scones are always sweet more crumbly and served with coffee as part of continental breakfast



Model says...

Sincere

Ground truth...

Sincere

Sarcastic OR Sincere?

Document 3

He doesnt buy new because new cars are never good deal

Sarcastic OR Sincere?

He doesnt buy new because new cars are never good deal



Model says...

Sarcastic OR Sincere?

He doesnt buy new because new cars are never good deal



Model says...
Sincere

Sarcastic OR Sincere?

He doesnt buy new because new cars are never good deal



Model says...

Sincere

Ground truth...

Sarcastic OR Sincere?

He doesnt buy new because new cars are never good deal



Model says...
Sincere

Ground truth...
Sarcastic

Sarcastic OR Sincere?

Detecting Sarcasm With Text Mining

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IST 736

Text Mining

Syracuse University

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