

# 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
<b>Naïve Bayes</b>	<b>1</b>	<b>no</b>	<b>yes</b>	<b>0.733</b>	<b>0.725</b>
<b>SVM</b>	1	no	yes	0.707	0.706
<b>SVM</b>	5	no	yes	0.701	0.7
<b>SVM</b>	3	yes	yes	0.701	0.698
<b>Naïve Bayes</b>	3	yes	yes	0.698	0.698
<b>SVM</b>	3	no	yes	0.693	0.692
<b>Naïve Bayes</b>	3	no	yes	0.684	0.684
<b>Naïve Bayes</b>	5	no	yes	0.676	0.677
<b>Naïve Bayes</b>	3	no	no	0.669	0.672
<b>SVM</b>	1	no	no	0.669	0.672

# Feature Importance

## Most sarcastic

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

## Most sincere

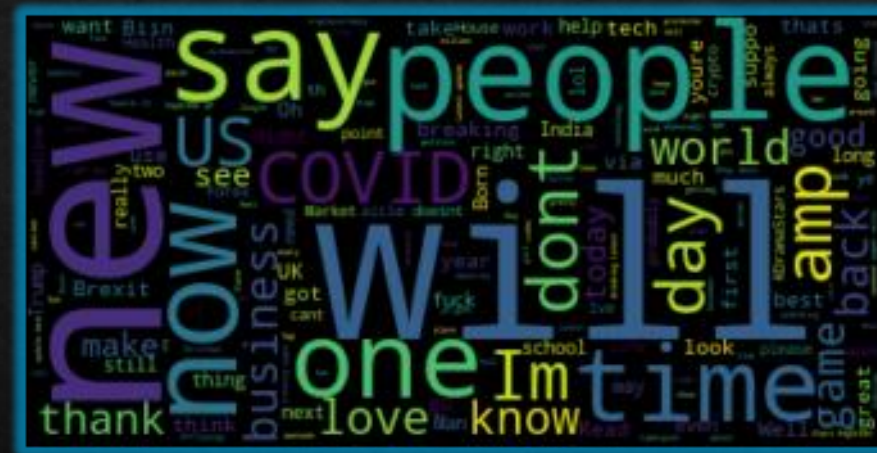
1. Covid
2. breaking
3. business
4. If
5. More



# Word Clouds



# Sarcastic



# Sincere

# Models Used

GAUSSIAN  
**NAIVE BAYES** CLASSIFIER

"Gaussian" because this is a normal distribution

This is our prior belief

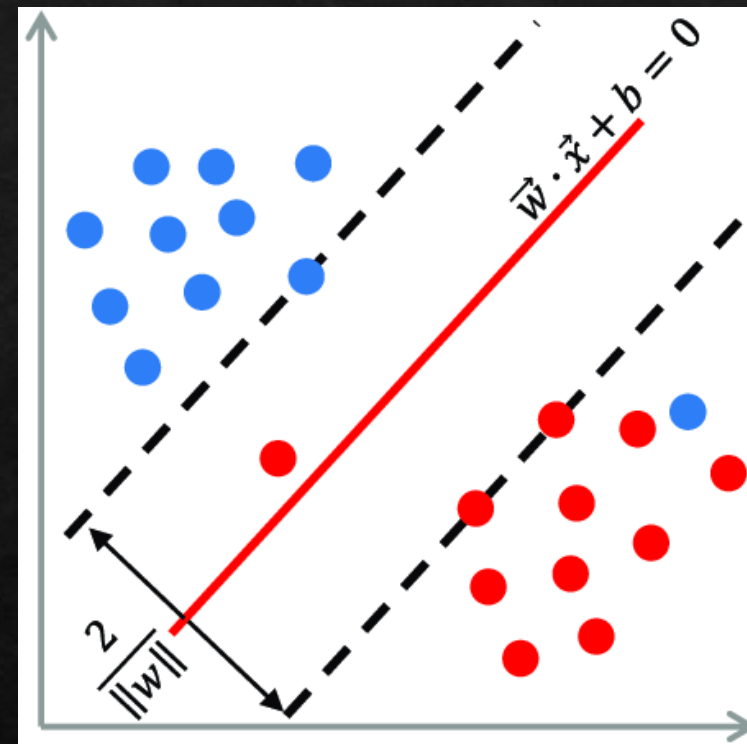
$$p(\text{class} | \text{data}) = \frac{p(\text{data} | \text{class}) \times p(\text{class})}{p(\text{data})}$$

We don't calculate this in naive bayes classifiers

Chris Albon

Naïve Bayes

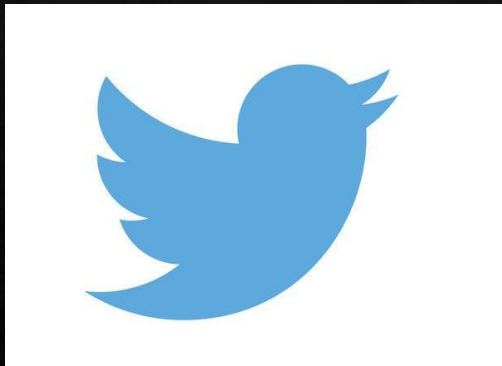
Accuracy: 0.73



SVM

Accuracy: 0.71

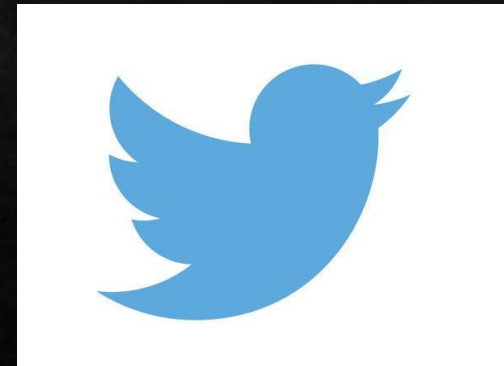
# Data Sources



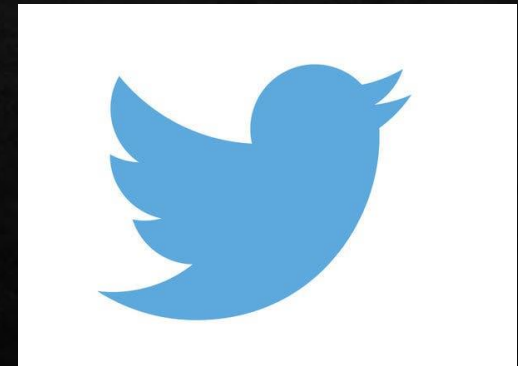
1,000 tweets



2,000 comments



1,000 tweets  
#news



1,000 tweets  
#sarcastic



# Why Are We Doing This?



A Little Recap From 11/08

# 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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Text Mining

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