



# FAKE NEWS DETECTOR

Team 12

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# Motivation

- ▷ Online sources have total publishing freedom
- ▷ Easy to have unreliable sources
- ▷ Need a way to sort real/fake news articles



# Dataset

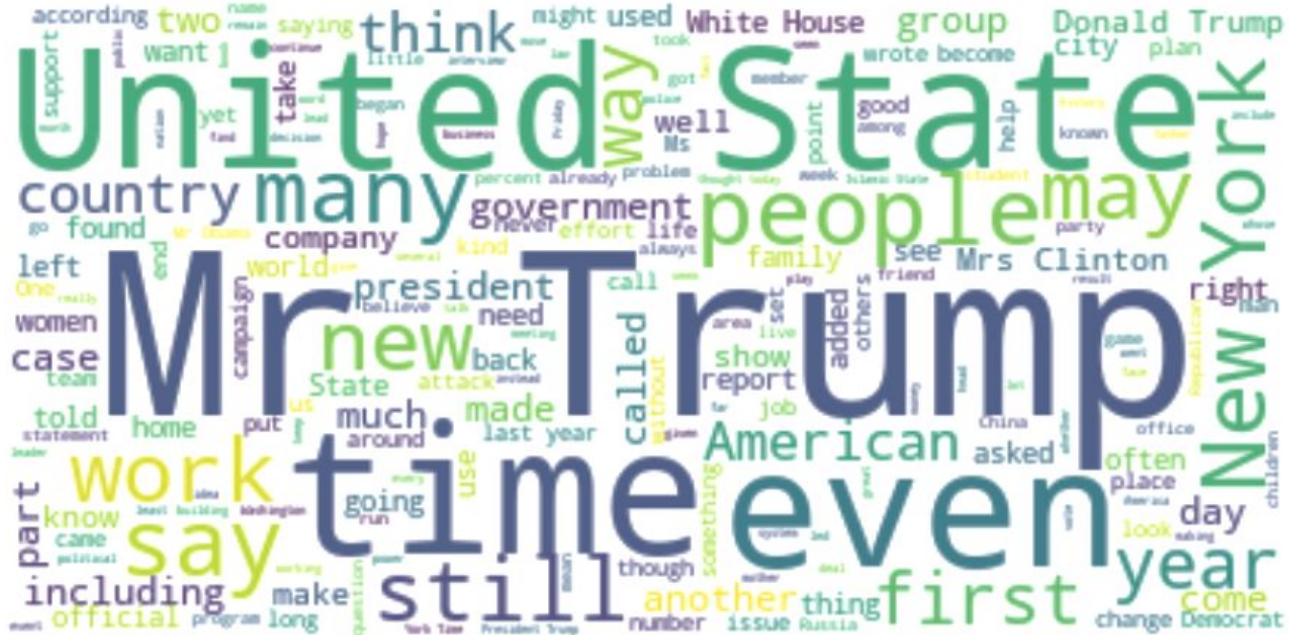


## Kaggle: 'Fake News'

- ▷ 25,000 articles
- ▷ InClass Prediction Competition

	id	title	author	text	label
0	0	House Dem Aide: We Didn't Even See Comey's Let...	Darrell Lucas	House Dem Aide: We Didn't Even See Comey's Let...	1
1	1	FLYNN: Hillary Clinton, Big Woman on Campus - ...	Daniel J. Flynn	Ever get the feeling your life circles the rou...	0
2	2	Why the Truth Might Get You Fired	Consortiumnews.com	Why the Truth Might Get You Fired October 29, ...	1
3	3	15 Civilians Killed In Single US Airstrike Hav...	Jessica Purkiss	Videos 15 Civilians Killed In Single US Aistr...	1
4	4	Iranian woman jailed for fictional unpublished...	Howard Portnoy	Print \nAn Iranian woman has been sentenced to...	1

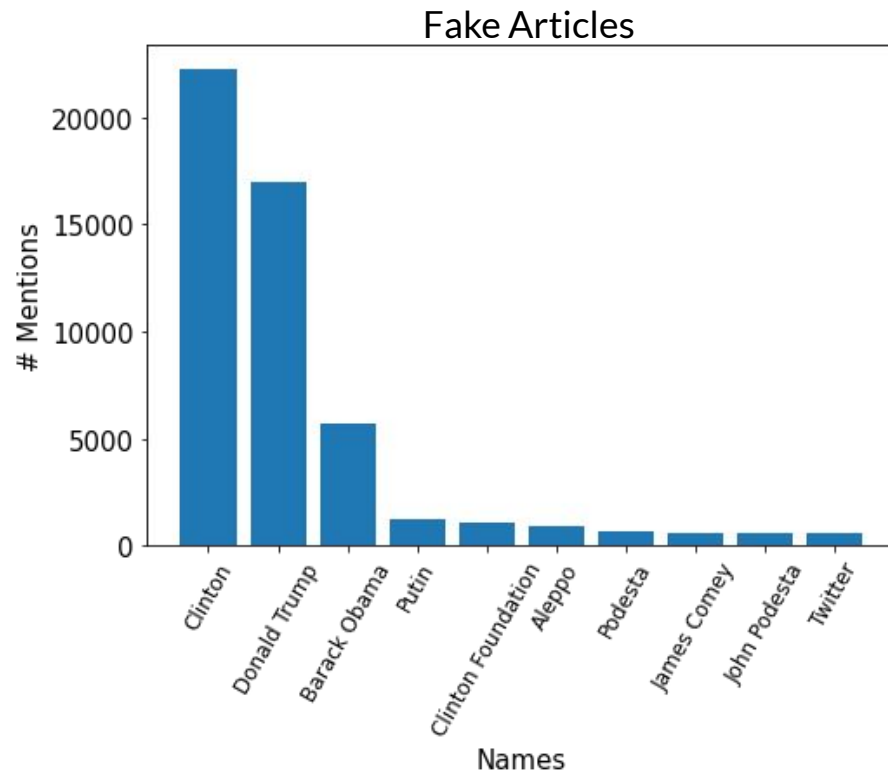
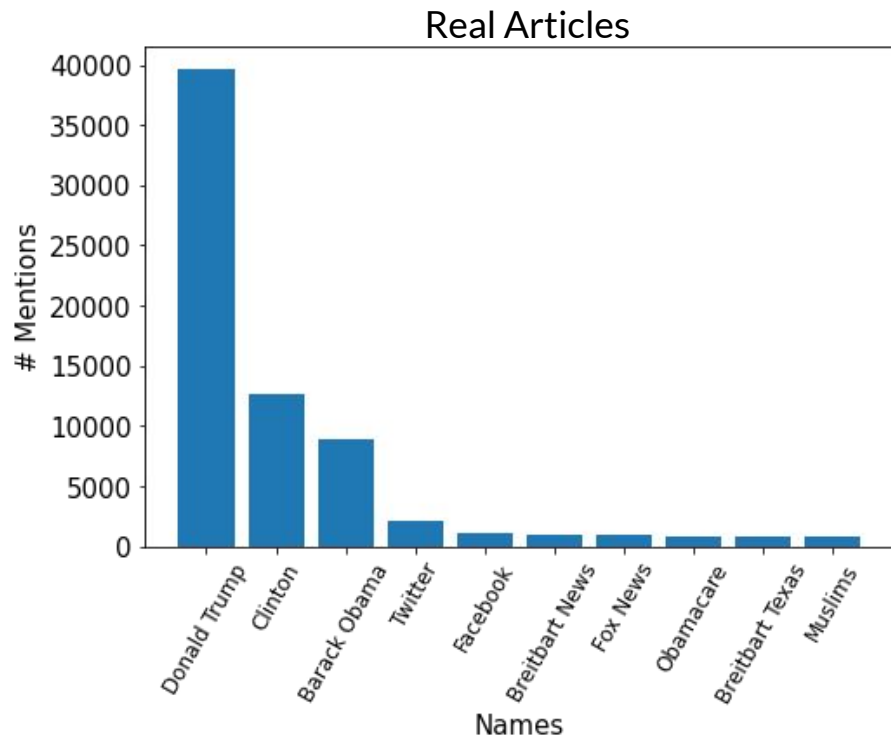
# Most Common Words in Real Articles



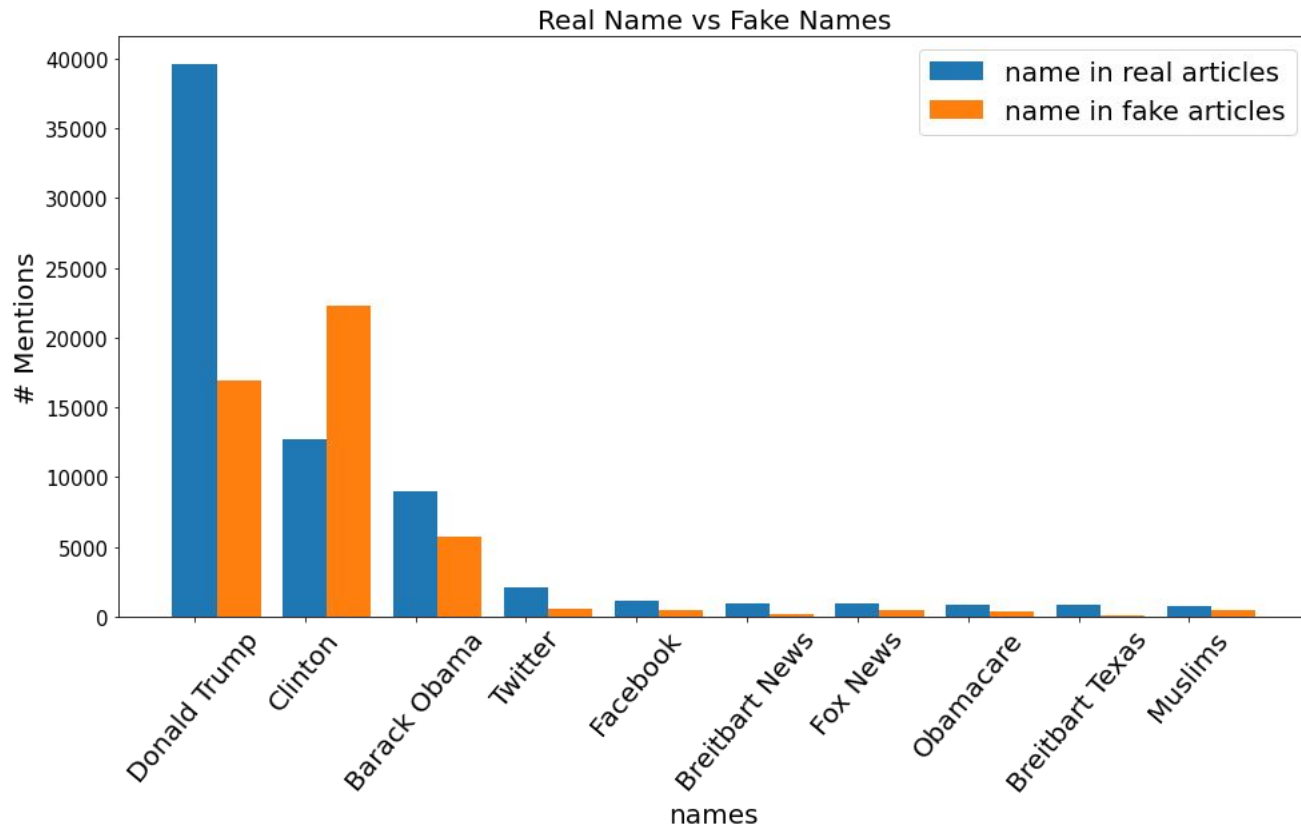
# Most Common Words in Fake Articles



# Most Common Name Drops

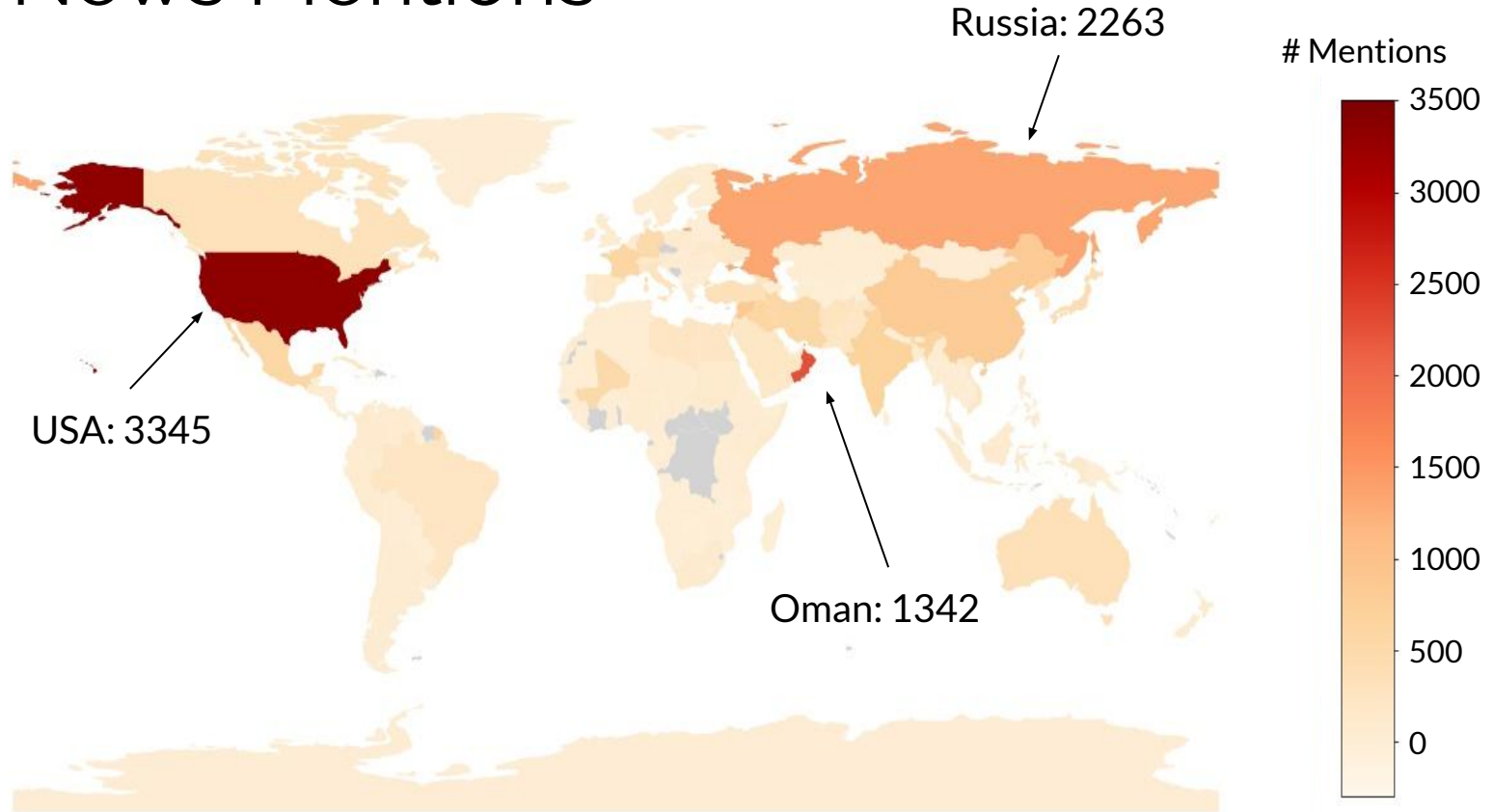


# Comparison of Real vs. Fake Name Drops



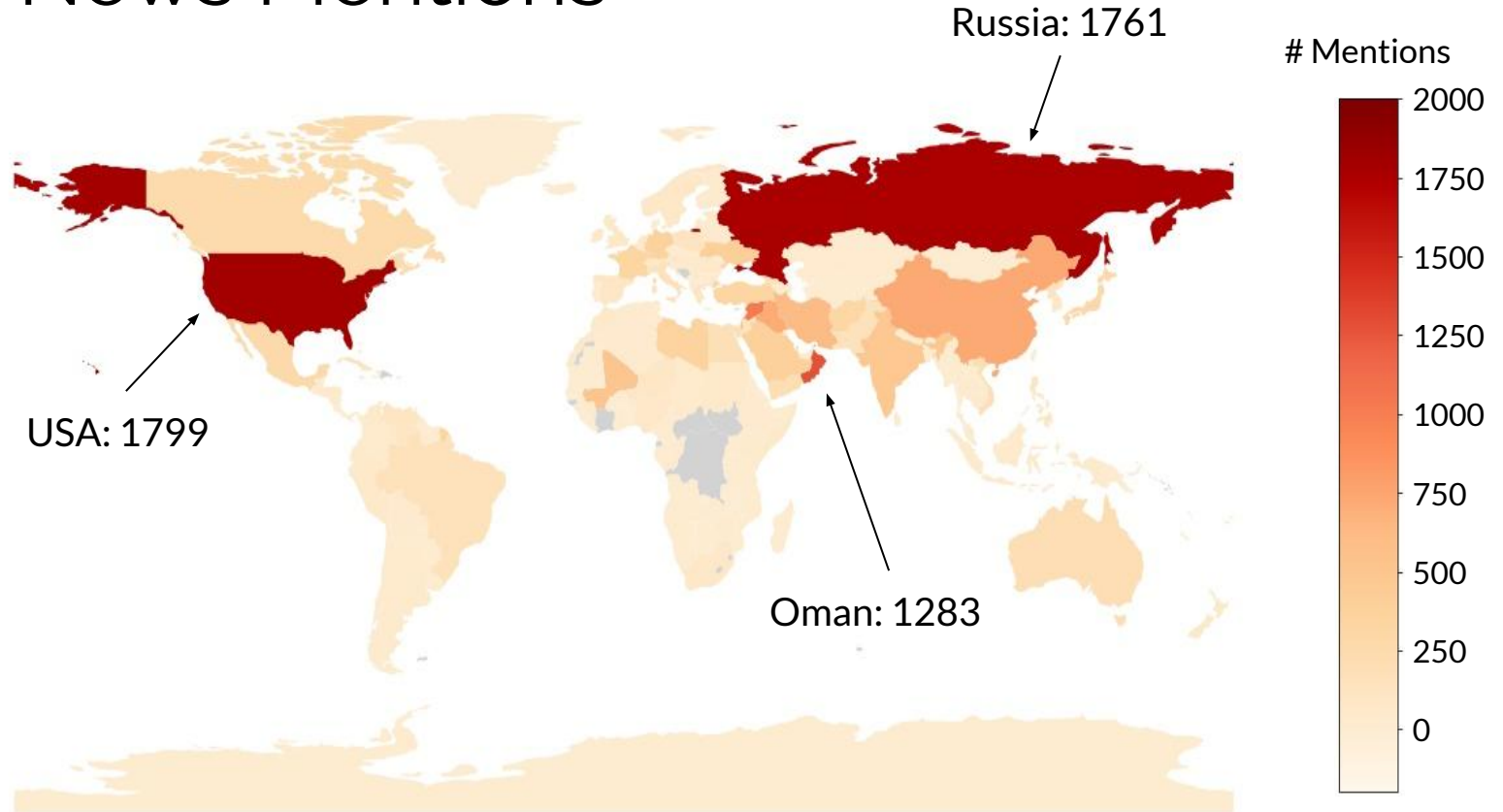


# Real News Mentions



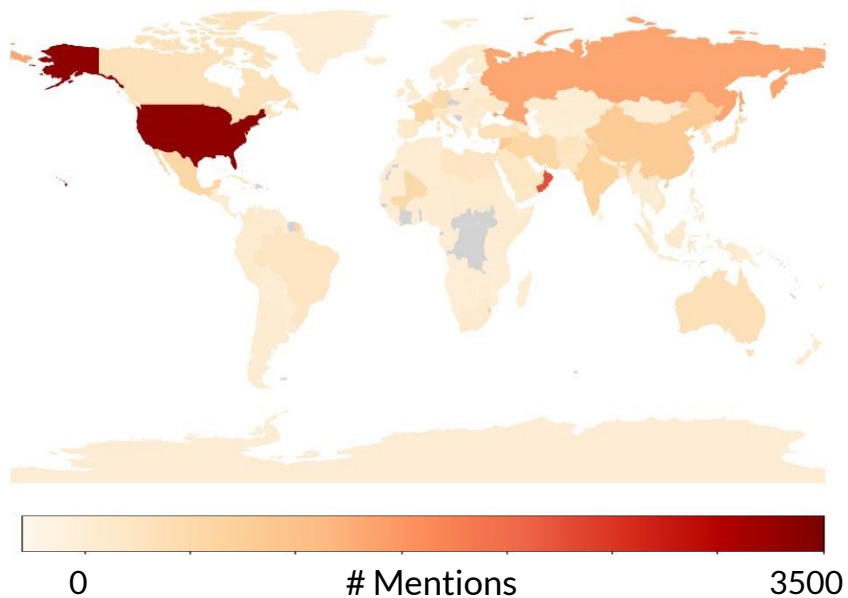


# Fake News Mentions

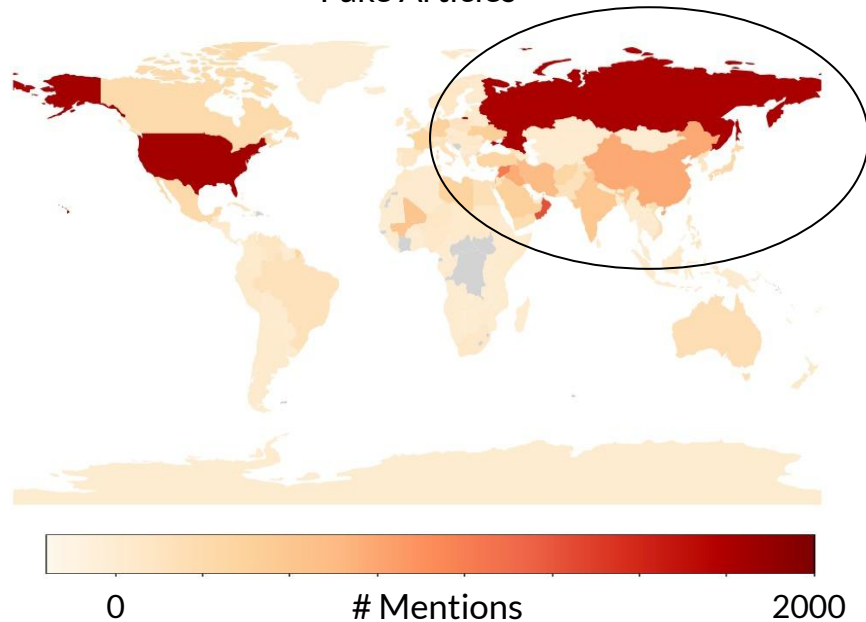


# Country Mentions

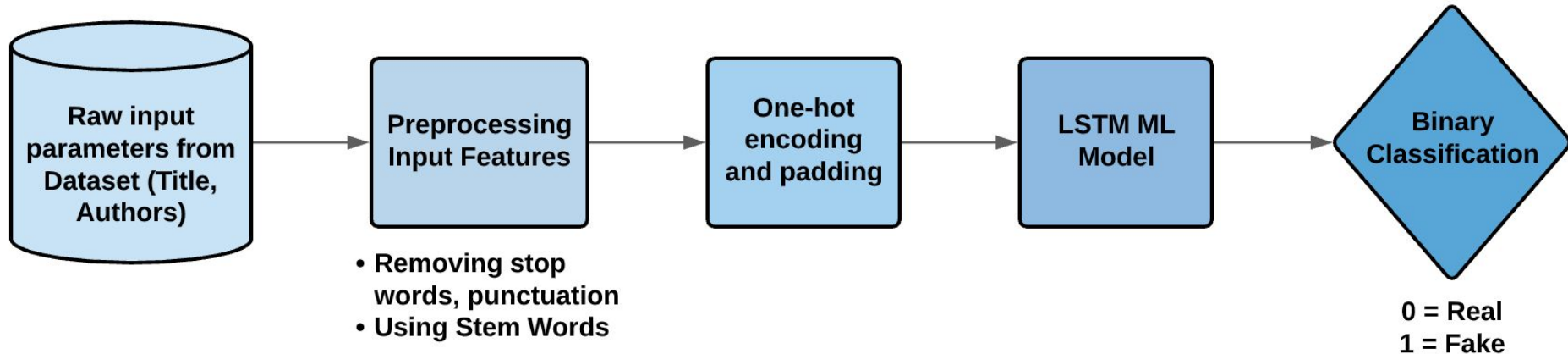
Real Articles



Fake Articles



# Machine Learning Algorithm

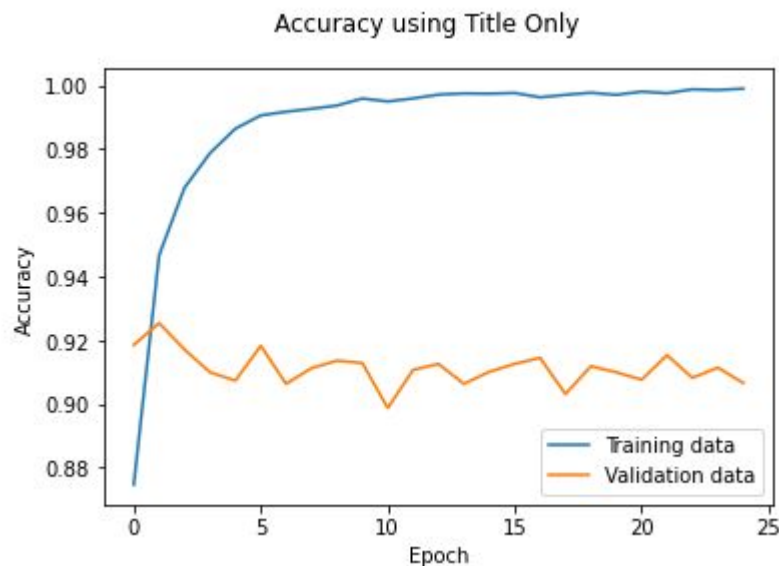


Packages Used:

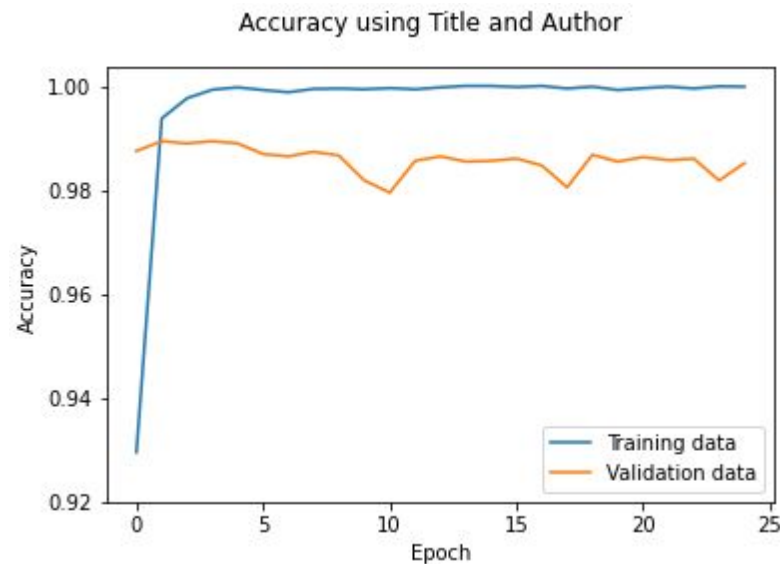
- ▷ nltk and re
- ▷ Tensorflow/Keras

# Model Accuracy

**Testing Accuracy - 91.04%**



**Testing Accuracy - 99.23%**



# Example Test Cases

## Real Article from *The New York Times*

>> Enter a title name of an article: House Republicans Fret About Winning Their Health Care Suit - The New York Times

>> Predicted article type: real

## Real Article from author James Clear

>> Enter a title name of an article: Zanshin: Learning the Art of Attention and Focus From a Legendary Samurai Archer

>> Predicted article type: real

## Fake Article from Breitbart

>> Enter a title name of an article: Before Trump Executive Order, Obama Officials Warned Islamic State Would Use Refugee Flows to Enter West

>> Predicted article type: fake

# Conclusions

- ▶ Machine Learning model
  - 91% accurate using title
  - 99% accurate using title and author
- ▶ Fake News is very politicized
  - E.g. 'Trump', 'Clinton', 'Russia'



# Future Directions

- ▷ Improve algorithm
- ▷ Incorporate ML into social media platforms

