

How Donald Trump Engages Twitter

Aravinda Kanchana Ruwanpathiran, Ganyu Peng, & Cassidy Buhler
School of Computing, University of Utah

Motivation

- The 45th President of the United States, Donald J. Trump, has a Twitter following of just under 60 million people.
- These tweets have tens of thousands of retweets, favorites, and replies.
- Analyzed Donald Trump's tweet content

Data Extraction

- Python-base Twitter API: 3229 @realDonaldTrump tweets from June 2018 to March 2019.
- Ranked tweets by "popularity" and only kept the tweets with specific keywords (i.e. "Illegal", "Wall", "ISIS", etc.) to get 218 tweets.



**The Most Popular Tweets
By @realDonaldTrump
June 2018 - March 2019**

Donald J. Trump @realDonaldTrump

Follow

For those that naively ask why didn't the Republicans get approval to build the Wall over the last year, it is because IN THE SENATE WE NEED 10 DEMOCRAT VOTES, and they will give us "NONE" for Border Security! Now we have to do it the hard way, with a Shutdown. Too bad! [@FoxNews](#)

11:25 AM - 29 Dec 2018

33,901 Retweets 145,285 Likes



Donald J. Trump @realDonaldTrump

Follow

Any deaths of children or others at the Border are strictly the fault of the Democrats and their pathetic immigration policies that allow people to make the long trek thinking they can enter our country illegally. They can't. If we had a Wall, they wouldn't even try! The two.....

10:30 AM - 29 Dec 2018

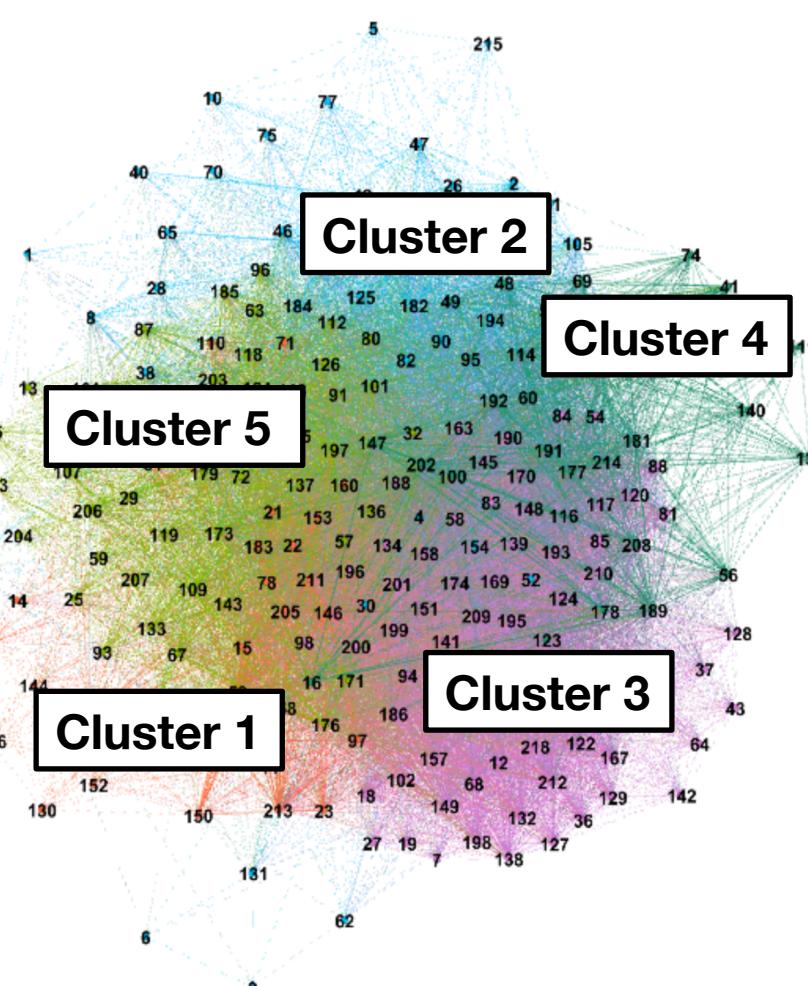
28,791 Retweets 121,572 Likes



Modeling Tweets With Graphs

- Spectral clustering and the modularity functions defined by Smyth and White[1].
- Used connection modeling for the graph generation.
- The models are: *Selected Words (keywords)*, and *Word2Vec*.

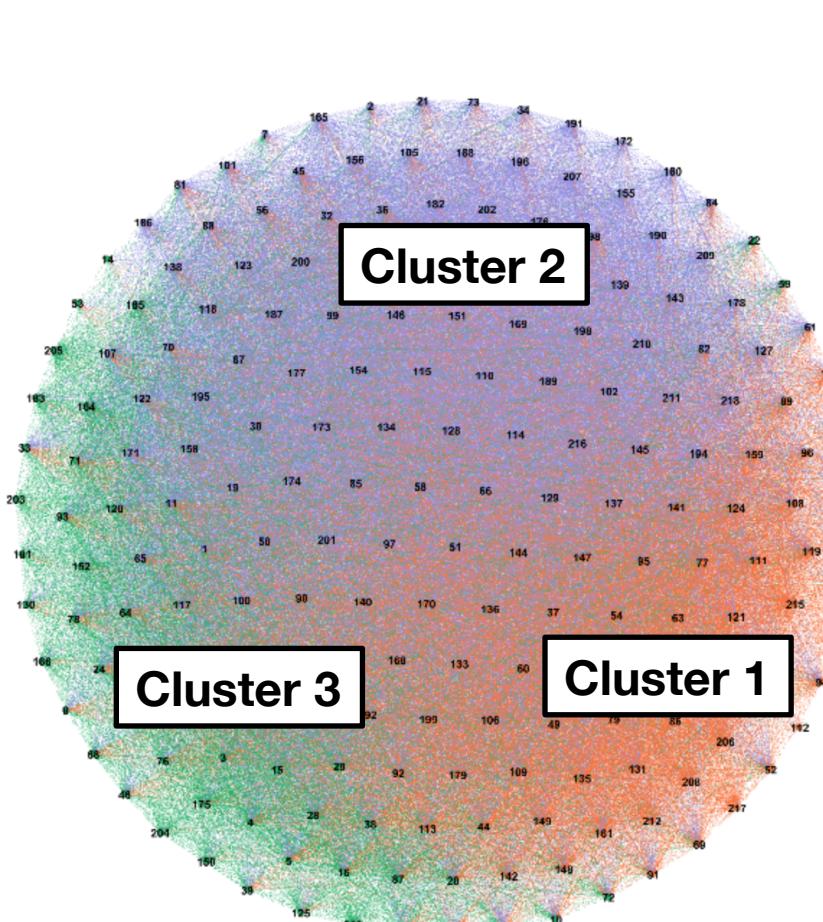
Selected Words Cluster Graph



Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
BORDER	FAMILY	WALL	MEXICO	ILLEGAL
CRISIS	GREAT	BORDER	BORDER	IMMIGRATION
SOUTHERN	PEOPLE	SECURITY	WALL	DEMOCRATS
ISIS	PUERTO RICO	DEMOCRATS	TRADE	COUNTRY
HUMANITARIAN	DEMOCRATS	COUNTRY	UNITED	ILLEGALLY

Most common terms per cluster
(Selected Words Model)

Word2Vec Cluster Graph

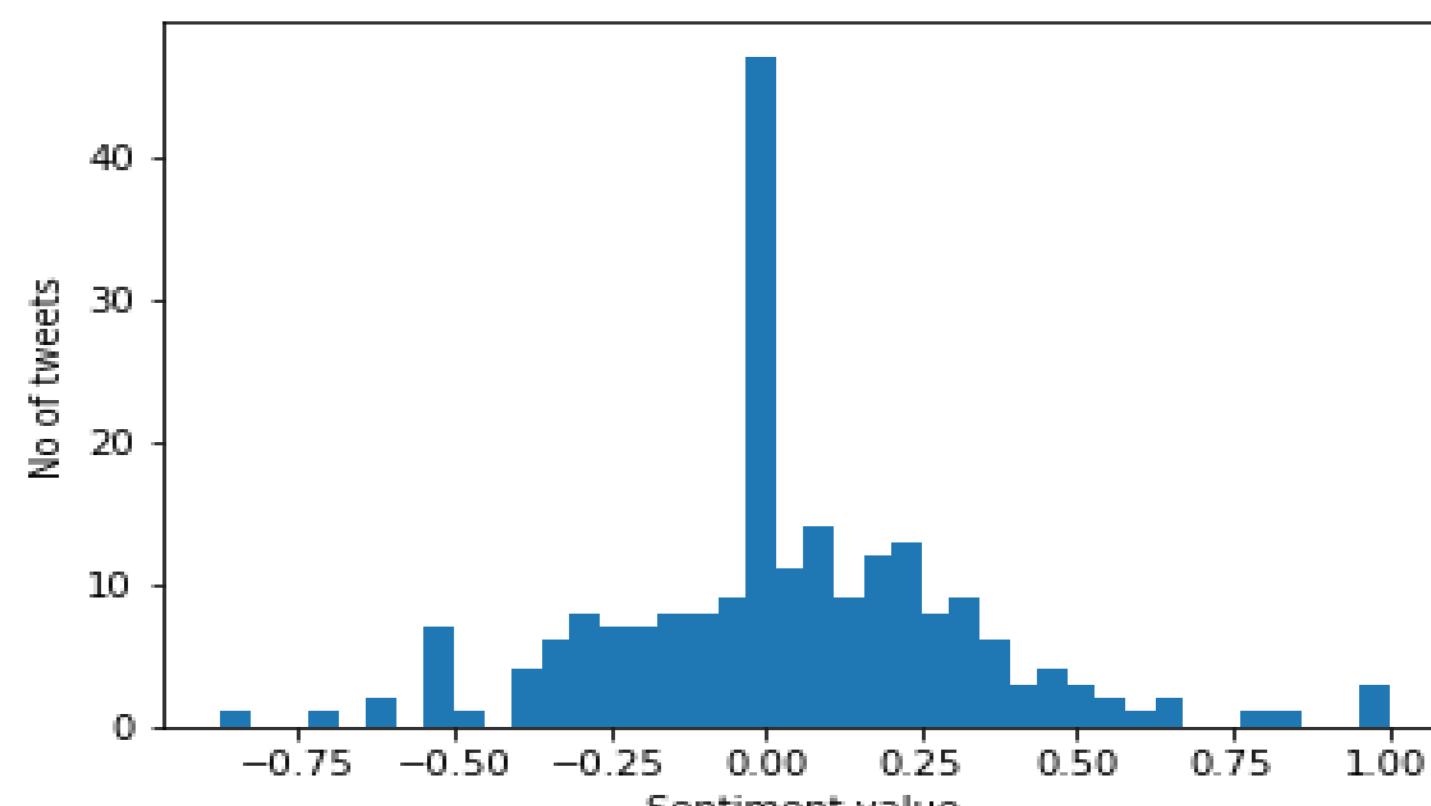


Cluster 1	Cluster 2	Cluster 3
BORDER	WALL	ILLEGAL
WALL	BORDER	BORDER
PEOPLE	DEMOCRATS	FAMILY
MEXICO	SECURITY	PRESIDENT
ILLEGAL	COUNTRY	CRISIS

Most common terms per cluster
(Word2Vec Model)

Sentiment Analysis

- Used the 218 tweets and did sentiment analysis on them using *TextBlob*.



Regression Testing

- Regression testing on every tweet to see if particular words correlate to retweets or favorites.

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	74239.03	4828.29	15.376	< 2e-16
No. word	74.63	241.77	0.309	0.7576
For.TRUE	-2474.66	2310.10	-1.071	0.2842
U.S.TRUE	10372.55	4293.57	2.416	0.0158
Fake.TRUE	19250.91	4366.18	4.409	1.10e-05
People.TRUE	8292.83	3310.71	2.505	0.0123
Democrats.TRUE	16992.87	3755.62	4.525	6.42e-06
North.TRUE	7220.42	5244.90	1.377	0.1688
Out.TRUE	-3786.10	2728.75	-1.387	0.1655
Border.TRUE	7336.16	3454.64	2.124	0.0338
will.TRUE	-330.49	2770.29	-0.119	0.9051
Than.TRUE	-3075.14	3016.94	-1.019	0.3082

Regression table for the number of **favorites** compared to keywords

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	18356.86	1022.23	17.958	< 2e-16 ***
No.word	100.24	51.19	1.958	0.05035 .
for.TRUE	-1187.40	489.09	-2.428	0.01528 *
u.s.TRUE	1202.98	909.02	1.323	0.18587
Fake.TRUE	5405.84	924.40	5.848	5.83e-09 ***
People.TRUE	2041.84	700.94	2.913	0.00362 **
Democrats.TRUE	4634.74	795.13	5.829	6.53e-09 ***
North.TRUE	-558.96	1110.44	-0.503	0.61476
Out.TRUE	-510.47	577.72	-0.884	0.37703
Border.TRUE	2195.14	731.41	3.001	0.00272 **
will.TRUE	-931.03	586.52	-1.587	0.11259
Than.TRUE	-1658.84	638.74	-2.597	0.00947 **

Regression Table for the number of **retweets** compared to keywords

Conclusion

- Majority of tweets do not have an overwhelmingly negative or positive sentiment.
- Selected Words Model and Word2Vec Model show that the popular tweets are divided into clear clusters.
- Retweets and favorites are directly related to the immigration, building a wall, government shutdown, border security, and the democratic party.
- "US", "Fake", "People", "Democrats", and "Border" are most effective at predicting the number of **favorites**.
- "Fake", "People", "Democrats" and "Border" are most effective at predicting the number of **retweets**.
- High performing tweet by Donald Trump would need to address the Democratic party, mention a U.S. border, and be neutral in sentiment.

References

- [1] White, S., & Smyth, P. (2005). A Spectral Clustering Approach To Finding Communities in Graph. *SDM*.