Classifying Tweets from Russian Trolls

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Russia's disinformation campaigns, then and now



The New York Times

Russian 2016 Influence Operation Targeted African-Americans on Social Media



Yevgeny Prigozhin, left, and the Russian leader Vladimir V. Putin, center, at a dinner in 2011. Mr. Prigozhin was indicted by American prosecutors for his involvement in interfering in the 2016 presidential election. Pool photo by Misha Japaridze

"I hope this is not the new normal, but I fear it is."



Robert Mueller, on Russian election meddling (July 24, 2019)

Examples of Russian troll content on Twitter











Right Troll tweets

3 million tweets

- Tweeting between '14 and '18
- Excluding retweets
- Collected by Linvill & Warren (Clemson University)



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Verified tweets

170,000 tweets

 Queried using the 80 most common hashtags appearing in the Right Troll dataset



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170,000 tweets

• Down-sampled to match shape

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Right Troll tweets

170,000 tweets



Verified tweets

170,000 tweets



Final dataset

340,000 rows

811 features



Words

america	country
#	#

Emojis

	4
#	#

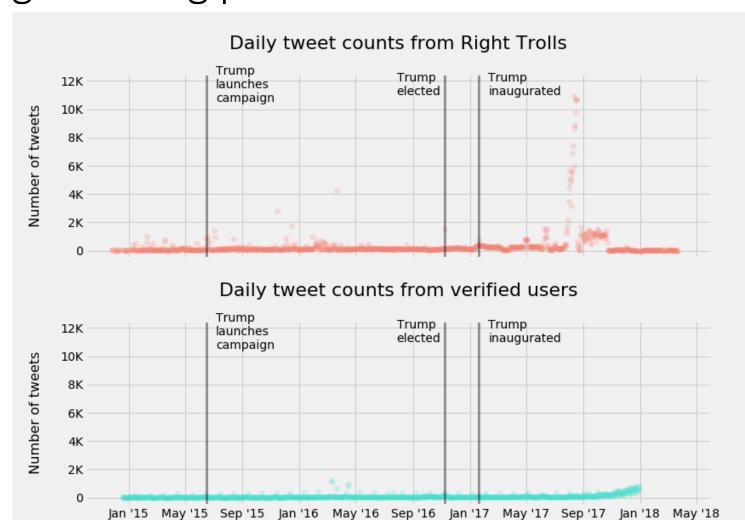
Hashtags

#Trump	#MAGA
#	#

Numeric features

links	pics
#	#

Visualizing tweeting patterns

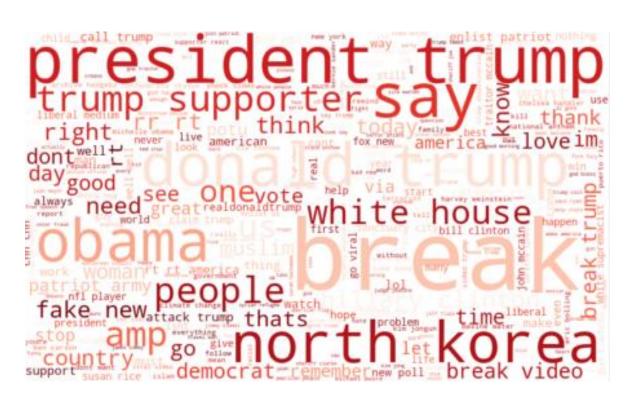


Day



Troll vocabulary vs. verified user vocabulary

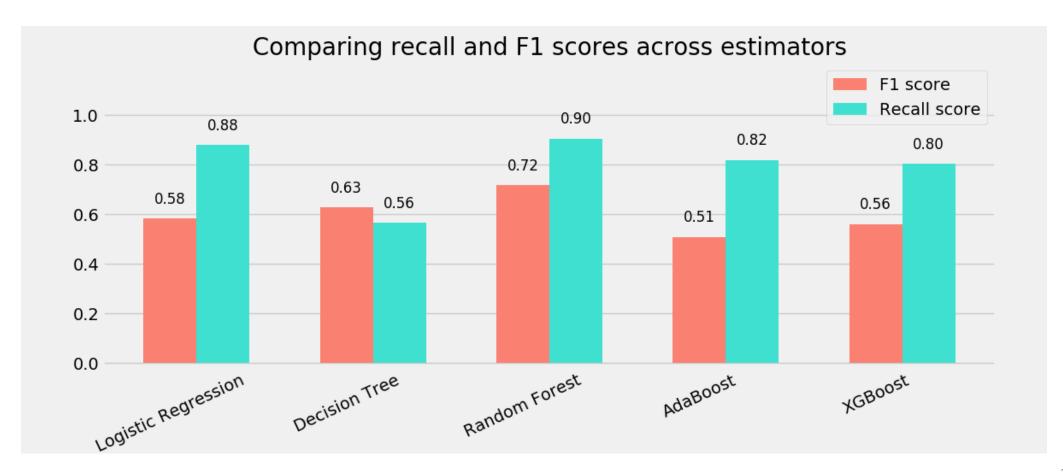






Comparing results from various classifiers

Scoring metric: Recall (trying to minimize false negatives)

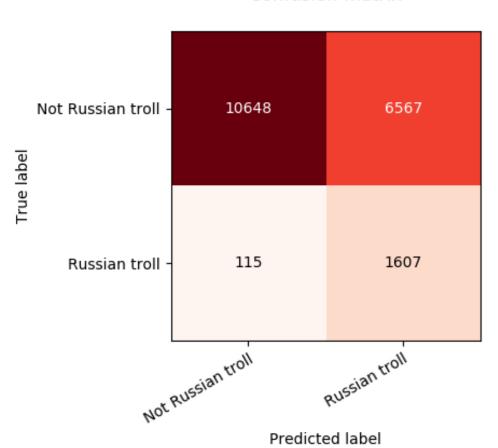


Best estimator: Random Forest



Best recall with grid search: 93.3%

Confusion matrix



Top 10 most important features

- pics_count
- trump
- pct_upper
- hashtags_count
- rt
- break
- #trump
- happy new
- mentions_count
- video

Examples of misclassified tweets





@TEN_GOP

Muslims protesting today in NYC. When will we see them taking over the streets in a movement against terrorism. #BodegaStrike https://t.co/gOU2obcHXV

2017-02-02 21:41:00



@RYANAMBISHOP

#StopIslam #IslamKills #PrayForBrussels please stay safe

2016-03-22 19:02:00



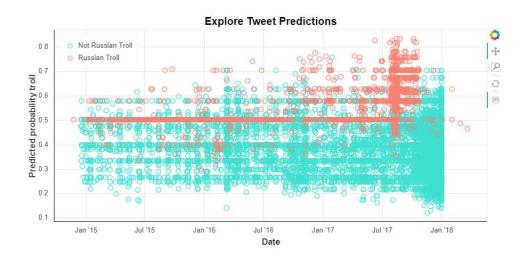
@COVFEFENATIONUS

@ChuckyStorms @john_mackay13 @JasperAvi @jaketapper @IronStache @TheDemocrats @SenateDems @HouseDemocrats @CNN @CNNI @CNNPolitics @CNNSitRoom @WolfBlitzer @JakeTapper @TheLeadCNN @BrianStelter @AnaNavarro @DonLemon @VanJones68 @AndersonCooper @AC360 @JimAcosta CNN IS #FAKENEWS! #FAKENEWS! CNN IS #FAKENEWS!

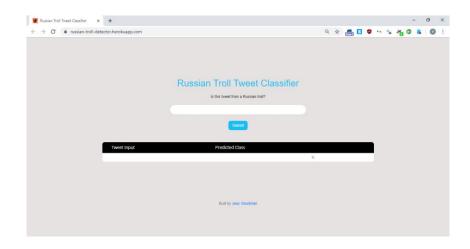
2017-12-02 02:13:00

Explore the data

Visualizing tweet predictions



Web app to make new predictions



Future work



- Test other word vectorizing approaches
- Further tune models
- Explore word embeddings, to help with reducing dimensionality
- Collect more verified tweets

Thank you!

Find me @ joeygoodman.us

Code + visuals: github.com/yontartu/bot-vs-human

Sources



Russian Troll tweets dataset: <u>FiveThirtyEight</u>

Verified tweets dataset: collected using twint

New York Times, "Russian 2016 Influence Operation Targeted African-Americans" (December 17, 2018)

New York Times, "Highlights of Robert Mueller's Testimony to Congress" (July 24, 2019)

Twitter, "Update on Twitter's review of the 2016 US election" (January 31, 2018)