Social Media Sentiment Analysis: Detection of Negative/Depressive Messages on Twitter

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## REEAL-WORLD PROBLEM

- . Is it possible to identify Tweets with a negative or depressive connotation using Machine Learning?
- . If so, this project can aid researchers to utilize social media postings as a method to identify individuals with trouble and apply early interventions.

# The Experiment

- We will use a data set from Kaggle.com that contains over 1.6 million tweets annotated on a scale from 0 (negative) to 4 (positive). 1 million for training and the rest is test data
- We will train the model to recognize what words have a negative/depressive connotation and which are positive
- We will use algorithms such as Naive Bayes and Logistic
   Regression to rank tweets on a positive to negative scale
- After that we will try to improve our model to be more accurate by taking into account word context and other factors

# Materials Python Libraries



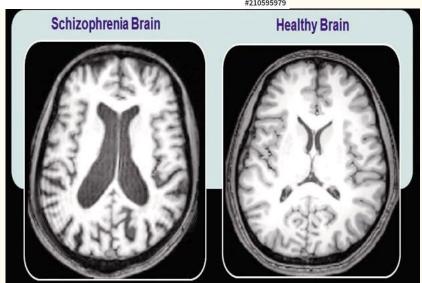
Gensim

Word2 Vec

#### Significance

- Understanding human language and sentiment is an increasingly relevant problem for computers
- Depression and negative mental illnesses are increasingly common in the modern age
- Machine learning algorithms can be used to help diagnose people at risk
- Beginning with identifying the sentiment in social media content, this technology could potentially be used to analyze signs of psychopathy, schizophrenia and other such conditions.





# Hypothesis

We hypothesize that we will be able to accurately predict the connotation of Tweets using

Machine Learning.

### FEASIBLE?

- . The students embarking on this project have intermediate coding skills, which should be enough to produce a successful and insightful project outcome.
- . One of the group members is proficient at sentiment analysis.
- .The other group member will get up to speed by taking short online courses on sentiment analysis prior to the analysis.
- .The professor advising this project determined that the project is feasible.

#### References (Primarily websites)

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- 4. <a href="https://time.com/1915/how-twitter-knows-when-youre-depressed/">https://time.com/1915/how-twitter-knows-when-youre-depressed/</a>
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