

Differentiating Depression from Pandemic Fatigue based on User Rhetoric and Language (Working Title)

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Context

Since the offset of the pandemic, depression has risen, but so has pandemic fatigue and blues. Although the line between fatigue and depression symptoms can be blurry at times, the biggest difference is in the length of these feelings. Depressed feelings last much longer with occasional pockets of joy, whereas fatigue can come and go in shorter episodes. Nonetheless, people affected by either pandemic blues or depression have found substantial support groups (online communities around a hashtag) on Twitter to voice their experiences and reassure others going through similar symptoms. When access to tele-medicine is unavailable due to high demand and other factors, it is not surprising to witness the explosion of these groups as more people turn to the Internet for help and advice.

Pandemic-specific groups such as #coviddepression, #quarantinedepression, and #covidanxiety were formed in response to the pandemic, while groups such as #livingwithdepression and #depressed had already existed before. The formation of these pandemic-specific groups provide a natural comparison to pre-pandemic groups in regards to the use of language and rhetoric used by respective members in each group to cope with and heal from their symptoms. As Emmoms writes in [1], mental health illnesses are rhetoric illness since sufferers' expressions of their experiences through language "fundamentally shapes their idea of health and illness." This comparison of language and rhetoric can help bring to light what symptoms may be more prevalent in each group and can help therapists to better understand their clients and their needs.

In [2], Leis analyzed Spanish tweets for signs of depression. This project aims to reach a similar goal, but the emphasis is not on signs of depression or fatigue, but focuses instead on ways language usage between the two groups differ and can such differences be utilized to classify new tweets as written by a fatigued or depressed user.

Objectives

The end goal is to have a working model that is able to distinguish tweets between the two groups with acceptable accuracy. But ultimately, insight such as what phrases, rhetoric, etc. are used by each group to cope with their symptoms can be more valuable when it comes to the question of what is the proper treatment for people suffering from fatigue, depression, or both.

The following lays down an action plan for my project:

1. Gather tweets data using the Twitter API for the specified hashtags for the past year. (I'm not sure how far back I should collect data for).
2. Clean the tweets and perform exploratory analysis to find the common phrases for each group, length of tweet, topics discussed, etc.
3. Apply a text vectorization method to encode texts.
4. Train a model using Navies-Bayes, SVM, and deep learning.
5. Validate results on testing data and compare results from the 3 models.
6. Create visualizations of metrics (such as F1 score, accuracy) and finalize exploratory analysis graphs.

Supervision

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- Supervisor #2 ()

References

- [1] K. K. Emmons, “Depression, a rhetorical illness,” in *Black Dogs and Blue Words: Depression and Gender in the Age of Self-Care*. New Brunswick, London: Rutgers University Press, 2010.
- [2] M. M. L. F. F. S. A Leis, F Ronzano, “Detecting signs of depression in tweets in spanish: Behavioral and linguistic analysis,” *Journal of Medical Internet Research*, vol. 21, 2019.