Analyzing Clinical Depressive Symptoms in Twitter

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Analyzing Clinical Depressive Symptoms in Twitter

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350 million people are suffering from clinical depression worldwide.

27 million Americans were diagnosed with clinical depression that is responsible for more than 30,000 suicides each year.

Our goal is to study and identify clinical depressive disorders using explicit and implicit expression of depression on social streams.

We developed a novel technique to unobtrusively analyze individual posts in social media to detect signs of depression that can be utilized to build a proactive and automatic screening tool for depression.

Leveraging clinical definition of depression, we build a depression lexicon that contains common depression symptoms determined by experts such as from the established clinical assessment questionnaires PHQ-9.

A subset of highly informative seed terms are selected from this depression lexicon for crawling depression-related tweets. For each lexical term, we calculate its association with all of the variations of the term “depress” using Pointwise Mutual Information (PMI) and Chi-squared test to quantify their correlation and thereby rank order them.

We demonstrated the potential of social media data for extracting clinical depression symptoms in individuals that can be leveraged to improve the current questionnaire driven clinical evaluation tools in its ability to glean clinical depression symptoms in a natural setting in a continuous and unobtrusive manner.

This analysis framework could benefit future research on building a warning system which can predict the onset of major depression.

References


Analysis

Depression Topics Frequency

Depressed Users Location Analysis

References

Most informative terms that can be leveraged to improve the current questionnaire driven clinical evaluation tools in its ability to glean clinical depression symptoms in a natural setting in a continuous and unobtrusive manner.

This analysis framework could benefit future research on building a warning system which can predict the onset of major depression.

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