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Twide: A Machine Learning Approach to Detect Depression

A dissertation by

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Abstract

Depression is the leading cause of disability worldwide. Almost 75% of people with mental disorders remain untreated in developing countries with almost 1 million people taking their lives each year. In addition, according to the World Health Organization (WHO), 1 in 13 globally suffers from anxiety. The WHO reports that anxiety disorders are the most common mental disorders worldwide with specific phobia, major depressive disorder and social phobia being the most common anxiety disorders. According to *Our World in Data Website*, Depressive disorders occur with varying severity. The WHO's International Classification of Diseases (ICD-10) defines this set of disorders ranging from mild to moderate to severe. The Institute for Health Metrics and Evaluation (IHME) adopt such definitions by disaggregating to mild, persistent depression (dysthymia) and major depressive disorder (severe).

Social media platforms are becoming an integral part of people's life. They reflect the user's personal life. People like to share happiness, joy, and sadness on social media. These platforms are used for researchers to identify the causes of depression and detect it. In Machine Learning, there are many ways for sentiment analysis such: decision-based systems, Bayesian classifiers, support vector machine, neural networks and sample-based methods. After reading some papers about using different Machine Learning and artificial intelligence techniques to detect depression on Social Media, I decided to apply sentiment analysis through a powerful theorem from probability theory called Baye's Theorem. The model will be written in python and it will tell whether a given tweet is depressive or not.

Keywords:

Depression detection, Sentiment classification, NLP, Machine Le