INTELLIGENT APPROACH ON EARLY IDENTIFICATION OF DEPRESSION VIA TWITTER

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Abstract

Depression has become a major public health concern globally(Marcus et al., 2012). It is one of the most common mental disorders with over 350 million people estimated as suffering from depression globally (Marcus et al., 2012). One out of four cancer patients undergo depression, one of three heart attack survivors experience depression (Hewitt and Rowland, 2002).

Medical diagnosis of early stages of Depression according to current practices is quite challenging due to limited resources provided when diagnosing. To fulfill this requirement, many researches have focused on social media based machine learning solutions. Hence the Twitter platform used by many researches contains an immense amount of invaluable data that can be molded into different forms to obtain infinite relationships that can be used in decision making.

The project provides different ways in which Twitter platform had being used in diagnosing depression, and limitations of the existing system. The project proposes a mechanism which can be used for self-assessment of Twitter users for depression that can be used in day to day life via a Twitter Bot. The project also provides a dashboard for an administrator to train models by selecting relevant machine learning algorithms, preprocessing techniques and feature extractions in order to build a machine learning model with high recall and accuracy. The proposed solution exposes services of the server as APIs which are then consumed by the dashboard and Twitter bot for require functionalities.

Keywords: Depression, Twitter, Machine Learning, Natural Language Processing, Application Programming Interfaces, Tweet Bot