

Abstract

Bipolar disorder is a type of mental illness that is characterized by mood swings between periods of depression or mania. According to the World Health Organization, about 45 million people worldwide suffer from this disorder. However, in most patients, the disorder is not diagnosed or there is a gap of 5 to 10 years between the onset of symptoms and diagnosis. As a result, the sufferer is exposed to risks such as suicide. In contrast, early detection of the disorder will have benefits such as preventing chronicity, reducing the severity of symptoms, and ultimately improving a person's quality of life and social functioning. Despite the importance of accurate and timely diagnosis, traditional diagnostic methods face many problems, which has led researchers to use automated diagnostic methods. In this regard, in the proposed system, various features related to bipolar and normal users have been extracted from Twitter data. A method for modeling and examining the changes of these features is presented in this dissertation, and finally a random forest classifier is trained on the available data. The evaluation of this system has been done with the help of the various criteria of accuracy, precision, recall and f-score. The results show that the proposed system has improved the performance of the detection process in comparison with other methods.

Keywords: Bipolar Disorder, Mental Illness, Twitter, Social Networking, Classification, Machine Learning