Psychological Disorders and Threats Detection Using Twitter Dataset

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ABSTRACT— Major depression constitutes a serious challenge in personal and public health. We have seen different approaches about the study of mental disorders and there classification. These study includes approaches like using Reddit dataset and Manually created themes which are used to distinguish each reddit post and classify it into its appropriate theme by using elussificntion techniques like CNN ete, then this report also contains approach like Fuzzy logic. In this topic we conclude that we are able to detect as well as classify mental disorders. Which will be use full for our further studies that is Suicidal Activities and Threat Detection Criminal Activities Detection and Threat Analysis.We used Twitter as a reality data source, from where we found the suspicious posts and profiles after comparison with the predefined database using various processing techniques and NCD formula. These techniques separate suspicious posts from the Twitter dataset to reduce the crime rates. Different approaches were explored in order to come up with the best learning rate for the classifier, experiments on the two feature sets were conducted to find out which one would be more effective. Several experiments were conducted to know what the best learning rate for this study. Constant, inv scaling and adaptive learning rate were used for this study. The result showed that the inv-scaling learning rate was the most optimal among the three learning rates. In this research we focused on Twitter data and incorporate historical data from people with mental health problems. People with high risk of committing suicide.

From the above writing we concluded that sentiment analysis of social media platforms like twitter can helps us to find and detect different kinds of threats and psychological disorders. By using sentiment analysis many crimes and suicidal activities can be stopped as well as information related to various companies can be exctracted through it.

Keywords— OS, Twitter Dataset ,Python 3.7 orgreater,SVM algorithm,Naïve Bazyes.

I. INTRODUCTION

Introduction to Project Mental disorders are a serious problem to be resolved because they affect emotional stability and security for both the person and the environment. Mental illness is a leading cause of disability worldwide. More than 300 million people of all ages suffer from depression.(WHO).

Normally, the mental health condition of a good person allows an individual to be able to develop all of his/her potential optimally. Hence, if this condition changes drastically,

uncontrollably and for a long time will interfere directly or indirectly because the sufferer is unable to judge reality or control him/herself to prevent disturbing others or damage and hurt him/herself.

Now a days Social media is A dominant communication tool. 145 million users are active on Twitter on a daily basis (Twitter,2019). So social media platform Twitter is the right place to study human behavior by analyzing twits and performing various classification techniques and algorithms

.We are using sentiment analysis also in order to improve results of our study that "Psychological disorders and threats detection using twitter data set". To prevent the addition of a number of mental disorders, it is important to make an effort as early as possible to recognize psychiatric conditions, so the factors are detected as a diagnosis.

II. LITERATURE REVIEW

Sr no.	Paper Title	Methodology	Relevanceo of Paper in Project
1	Character is at icon of mental health condition sin social media using Informed Deep Learning	FF,C NN,SVM	To effectively monitor mental health of person using social media. Categorize them for next modules in project (i.e. for suicide and criminal threats detection).
2	Cyber gcrime profiling :Textminin gtechniquesto detect and predict Criminal activities in microblog posts.	NCD ,logestic regression	Cyber crime profiling ganddata mining Hashtags Normalised Compression Distance(NCD)for mula
3	Suicidal Behavior Detection on Twitter Using Neural Network.	Twitter Advanced Search, Cross Validation ,multinom ial lNB	Suicidal activities detection. Searching suspicious tweetsusing Twitter Advanced Search(TAS) Tweets labelledas "Risky"and "Non Risky" asperthetypr of tweet.
4	Senti mental analysis forth enews databased on the social media.	Leven shte in Algorithm ,NB	Sentiment computation of large amount of data Bigdataandit's classification

Table 1: Literature survey
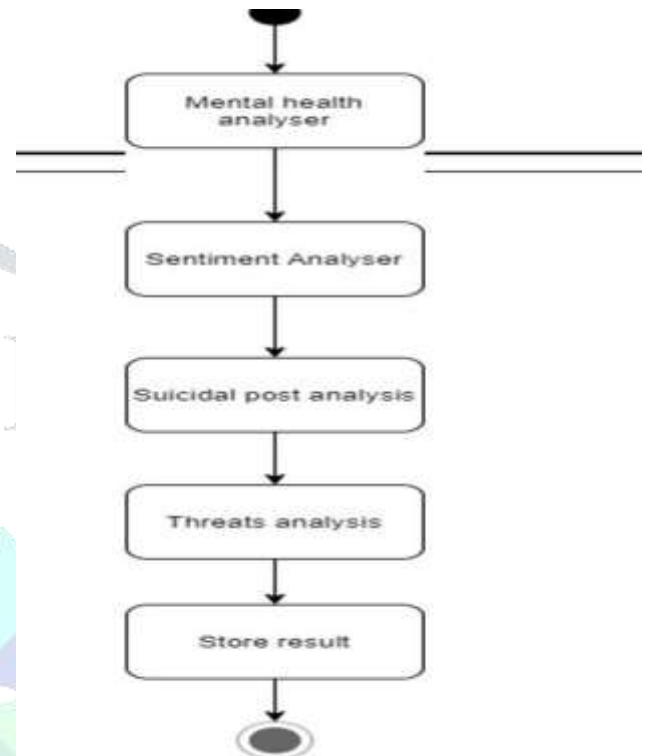
III. PROPOSED METHODOLOGY

Fig: model architecture

This section presents System successfully detects the type tweet i.e. whether the tweet is malicious or not. User will also able to detect whether the tweet is suicidal or criminal. Our system can be efficiently used in the process of detection and prevention of malicious activities on Twitter. The goal of this study is to use real-world data to explain criminal or suspect human behaviour. We conclude in this section that we can detect and diagnose mental diseases. Suicidal Activities and Threat Detection,Criminal Activities Detection, and Threat Analysis. We used Twitter as a reality data source, from which we identified suspicious tweets and profiles after comparing them to a predetermined database using a variety of processing algorithms. system contains four modules. Each module requires different algorithms and classification methods. Our system will use SVM (Suppoert vector machine) for detection of mental illness tweets. For sentiment analysis, our system uses K-fold cross validation technique which is time efficient. For classifying if the tweet is suicidal or criminal, our system will use Multinomial Naïve Bayes technique and

logistic regression technique respectively. We can get the better accuracy with this system is empirically demonstrated above that training the CNN model using a balanced dataset with batch normalization takes the lead in the result table All the algorithms are implemented efficiently.System successfully detects the type tweet i.e. whether the tweet is malicious or not.

Work Flow of System

- The flow begins with taking an input word in real-time.

- In next step the pre-processing of word is performed like with comparing with data wheather its malicious or not.

- Our system will use SVM (Suppoert vector machine) for detection of mental illness tweets. For sentiment analysis, our system uses K-fold cross validation technique which is time efficient.

- For classifying if the tweet is suicidal or criminal, our system will use Multinomial Naïve Bayes technique and logistic regression technique respectively. We can get the better accuracy with this system..

- Lastly the output word is displayed with the prediction results.

IV. RESULTS

fig1 .main GUI window

Fig2 tweet as input

Fig3.after pressing shows button

Fig4.Mental Health Module

Fig5.Sentimental Analysis Module
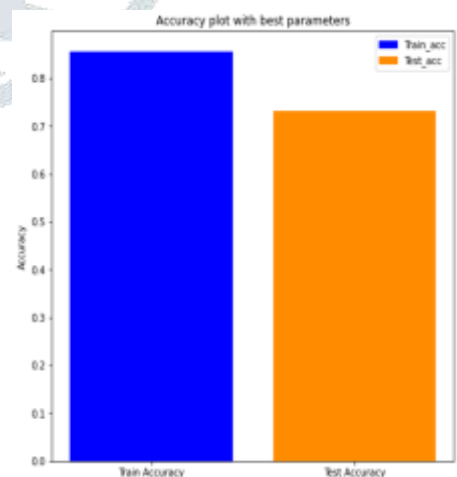
Fig6.Accuracy plot with best parameters

V. CONCLUSION

The model proposed was developed very carefully and error-free while being efficient. During this research, we studied mental health and effect is necessary.Project effectively combines 4 different modules in single project.It can classify mental health.It can differentiate between positive and negative statements.It can detects

suicidal,depression related tweets.It can used to detect and prevent cyber bullying.

VI. REFERENCES

1.Gkotsis,G.*et al.* Characterisation of mental health conditions in social media usingInformedDeepLearning.*Sci.Rep.*7,45141;doi:10.1038/srep45 141(2017).

2.S.AlamiandO.Elbeqqali,"Cybercrimeprofiling:Textminingtechniq uestodetectandpredictcriminalactivitiesinmicroblogposts,"*201510th InternationalConferenceonIntelligentSystems:TheoriesandApplicat ions(SITA)*,Rabat,2015,pp.1-5,doi:10.1109/SITA.2015.7358435.

3.F.Shahare,"Sentimentanalysisforthenewsdatabasedonthesocia lmedia,"*2017InternationalConferenceonIntelligentComputinga ndControlSystems(ICICCS)*,Madurai,2017,pp.1365-1370,doi:10.1109/ICCONS.2017.8250692

4.Sangaralingam K, Verma N, Datta A, Chugh V and Ravi A 2018 Predicting Age & Gender of Mobile Users at Scale - A Distributed Machine Learning Approach International Conference on Big Data (IEEE) pp 1817–26