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MACHINE LEARNING BASED SUICIDE IDEATION FOR MILITARY PERSONNEL

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Abstract – The project present investigation of emotional wellness phenomena in openly accessible social networking sites . First define a set of stress - related textual, visual, and social attributes from various aspects, and then propose a novel hybrid mod el. By additionally investigating the social communication information, likewise find a few fascinating phenomena.

I. Introduction

Psychological wellness conditions influence a noteworthy level of the world 's adult population every year. Including depression, eating disorders like anorexia and bulimia, bipolar disorder and post-traumatic stress disorder (PTSD). Endless anxiety expands the danger of creating medical issues, for example, a sleeping disorder, corpulence, heart ailments so on. Hence, there is noteworthy significance to identify stress some time before it transforms into serious issues .

The successful implementation of an expert system depends very strongly on motivation. Along with the corporate goals of a company, motivation is the most vital factor. Before the start of expert system, one could obtain expert advice in two ways . In the first case, one could directly consult an expert. This process is expensive, if the expert is a professional person, such as a tax consultant; lawyer or a doctor. Furthermore, this means travelling to the expert and making an appointment which is not often easy. Sometimes people do not feel comfortable when discussing their personal problems with experts . There are exceptions, but this is the trend of public perception before people discuss their problem with an expert. In the second way, one could read the relevant books and articles, usually written by experts . This approach is not without its problems . It is time consuming to find the relevant books and articles . Moreover, it takes quite a long time to understand various concepts and find the particular part of the book which is relevant to one's specific problem. Also, this approach is relatively suitable for a small part of the population which is really literate. Therefore, the most obvious reasons for building expert systems are, scarce human experts and the high cost of consulting them. The cost of developing an expert system is also high at the beginning, but in the long term it would be bearable compared with the growing cost of human expert employment. Human experts are not always within reach compared with expert systems . Furthermore, expert systems make it possible to computerize existing
empirical knowledge within a company. This knowledge is available at anytime, anywhere, at constant quality. It is because of these reasons that there is a need to develop a system which detects suicide stress based on social interactions in social media.

II. Lite rature vie w

Paper 1: Detecting Suicide stress Based on Social Interactions in Social Networks - Huijie Lin, Jia Jia*, Jiezhong Qiu, Yongfeng Zhang, Guangyao Shen, Lexing Xie, Jie Tang, Ling Feng, and Tat-Seng Chua.

Paper 2: Sentiment analysis in twitter using machine learning techniques -M. S. Neethu,R. Rajshri.

Paper 3: Detecting Emotions in Social Media: A Constrained Optimization Approach-Yichen Wang,Aditya Pal.

Paper 4: A Machine Learning Approach to Twitter User Classification.

Paper 5: NLP based sentiment analysis on Twitter

data using ensemble classifiers .

Paper 6: Twitter sentiment analysis -Aliza Sarlan,Chayanit Nadam,Shuib Basri.

Paper 7: Twitter Sentiment Classification using Distant Supervision-Alec Go,Richa Bhayani,Lei Huang.

Paper 8: Sentiment analysis of twitter data using machine learning approaches and semantic analysis

III. Propose d Me thodology

This project aims to contribute toward better understanding Mental Disorder by proposing a schema - based sentimental Analysis that: can identify the structure of each of the tweets and class of each tweets . After classifying all of the tweets with each of the sentences it has been sentimental. With th e help of sentiment extraction, it is easy to leverage each of the tweets, so that it is easy to classify each of the stress rate level.

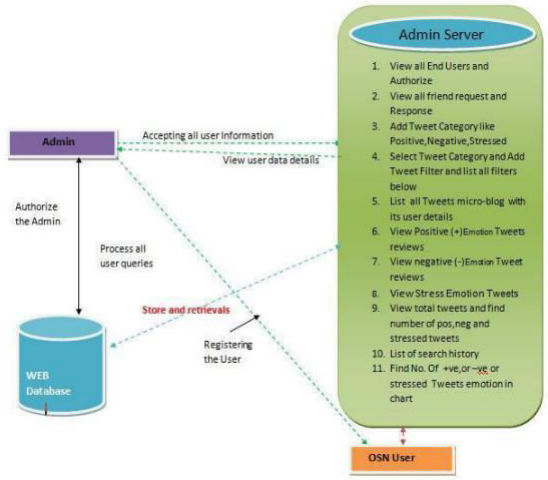

***Fig .1:** System Architectural diagram for suicide stress detection*

This is the architectural diagram of suicide stress detection. T h e r e are two users OSN user and Admin user. Admin can view all the End users request and responses . OSN user can Register and login into the system. OSN user can search for the friend's tweets and request friends, create tweet by tweet name, Tweet description, Tweet image and date, view all your created Tweets and find positive, negative, Suicide stressed emotions on your Tweets .

IV. Functions

Registration / Login Management: User will Login with their username and password. If user forgot password, they can change the password by change password option. If user unable to login error message will be displayed.

Account Manager: User's different accounts will be accepted and on the basis of their comments and interactions, user will get the report.

Image/visual/text manager: This module includes management of text (chats, comments), images of the users shared on their account.

Suicide stress Report: On the basis of user level attributes on the social interaction of the user. User must be given the suicide stress level report. Additional to that user will be suggested do's and don'ts of that suicide stress .

General Views: A user can click on any available link or page to view the content information. Users can exit the system at any time.

Administrator Module: This module provides administrator related functionality. Administrator manages all information and has access rights to add, delete, edit and view the data related to user accounts, comments, interactions etc.

V. Conclusion

In today's world, where mainly the youth and almost all of the population is suffering from surmounting suicide stress, be it because of peer pressure, work load or other domestic tensions; it is very crucial to have a reality check about how suicide stressed a person really is . It is because of this reason that timely detection and prevention of suicide stress is a dire need. It has come up with that assists people in scrutinizing the problem of suicide stress . This project will be very beneficial for those who are not so comfortable in opening up about their problems to others . It will help these people get a reality check and may prompt them to reach out and get medical help, just based on their social interactions . This system has utilized both human as well as machine learning and applied the concepts of Sentiment Analysis . The main characteristic of this system is its non-invasiveness and fast-oriented implementation in detecting suicide stress when compared with the previous approaches

VI. Future work

This website is helpful for normal users as well as doctors as they can find the suicide stress of the user. And the doctor will provide help to reduce the suicide stress of users . In future this website can be upgraded to real time suicide stress detection based on user tweets . Also, the algorithm used can be upgraded to have efficient and less time complexity and high accuracy. The scope of the project is in detecting users ' psychological suicide stress states from users ' weekly social media data, leveraging tweets ' content as well as users ' social interactions and also in user-level emotion detection in social networks . This system further used by the doctors to give advice to all the users who are suicide stressed. It will saves the time of doctors as well as users .

VII. Re fe re nce s

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