Use of Social Interactions in Social Media for Detections of Mental Disorders

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Abstract: Nowadays people are not complete without use of social media. So overall interaction is done on social media. Such excessive use of social media people suffer from mental disorder. Which affect badly on human lives. For saving humans life from social addiction we proposed our system. First we find out mental disorders that are: Cyber Relation(CR), Net Compulsion (NC), Internet Overload(IO). Social addicted persons are identifies by using Support Vector Machine Algorithm by classifying in to above three classes. Also to improve our system accuracy, we further do comparison between other classification algorithm to find out accuracy with each using same dataset.

Keywords: Support Vector Machine, mental disorder, social network, classification.

I. INTRODUCTION

Social Network is main source for our system. System based on data available in social media. World Health Organization resulted in 2001 that 300 million people suffer from depression. 17% in the United States at 3% reported in Japan these shows a large variation of prevalence of life reports. Use of social media platforms (Twitter, Facebook, Instagram) day by day increases to communicate and share their thoughts and opinions with another users or friends. Motivation is that young generation easily get affected and may take wrong decision. So we are trying to find out potential users suffer from Social networks disorder. Mainly we are capturing behavioral characteristics from data that are relevant to a person's thought, activities, mood, communication and socialization [1]. Using such critical data we can saves one's life, life is nothing greater than other.

We formulate the task as a semi-supervised classification problem to detect three types of SNMDs [1]: i) Cyber-Relationship Addiction, which shows addictive behavior for building online relationships; ii) Net Compulsion, which shows compulsive behavior for online social gaming or gambling; and iii) Information Overload, which is related to uncontrollable surfing. By exploiting machine learning techniques with the ground truth obtained via the current diagnostic practice in Psychology [1], we extract and analyze the following crucial categories of features from OSNs: 1) social comparison, 2) social structure, 3) social diversity, 4) parasocial relationships, 5) online and offline interaction ratio, 6) social capital, 7) disinhibition, 8) self-disclosure, and 9) bursting temporal behavior. These features capture important factors or serve as proxies for mental disorders detection. For example, studies manifest that users exposed to positive posts from others on Facebook with similar background are inclined to feel malicious envy and depressed due to the social comparison.

Rest of this paper is arranged as follows. Section II gives literature survey. Section III gives proposed architecture of system. Further section IV gives methodology. And at last section V concluded system.

II. LITERATURE SURVEY

Excessive use of social networking apps – usually associated with a loss of the sense of time or a neglect of basic drivers, and withdrawal including feelings of anger, tension and/or depression when the computer apps are inaccessible. Social network mental disorders is social oriented occurs using social media. Those with SNMDs usually lack offline interactions, and as a result seek cyber-relationships to compensate. Today, identification of potential mental disorders often falls on the shoulders of supervisors passively. However, since there are very few notable physical risk factors, the patients usually do not actively seek medical psychological services. Therefore, patients would only seek clinical interventions when their conditions become very severe.

Liang et al. [2] They proposed a novel group-Lasso-based feature learning model that characterizes the feature dependence, feature sparsity, and interactions among missing values. To ensure global optima

proposed parameter optimization. Extensive experiments on 10 real-world datasets with multiple data sources demonstrated that the proposed model outperforms other comparison methods in different ratios of missing values.

In Germon et al. [3] They observed that instead of specially created images, user-generated content has a higher success for the online travel agencies community, and that is especially the case with travel agency AirBnB. The engaging photographs mostly depicted landscapes and contained calls for action in the description: calls such as like, tweet, retweet or comment. From Instagram users and non-Instagram content the most bloggers sharing their experiences.

Anandkumar et al. [4] use tensor decomposition that works in overcomplete regime. Latent variable models on the overcomplete regime guarantees for learning, where the observed dimensionality exceeds the latent space dimensionality. Especially, they consider sparse coding models, ICA and multiview mixtures. In the semi-supervised setting, to get a rough estimate of the model parameters they exploit label information, and then on unlabeled samples with the help of tensor method refination process takes place. They compare 3 emoticon preprocessing methods and emoticon-weight lexicon method on the base Twitter aware tokenizer and NB Model Wegrzyn-Wolska et al. [5]. Hinge et al. [6] identify potential users on social network with social network mental disorder. Anandkumar et al. [7] specify which overcomplete models can be identified given observable moments of a certain order.

III. SYSTEM ARCHITECTURE

System architecture is based on Machine Learning technique in that dataset is collected from social media. Dataset preprocessing operation is used to identify system related features. Features like social and personal shown in fig. 1. Extracted features are trained to identify or classify users in to SNMDs. Classification done into three mental disorder using support vector machine.

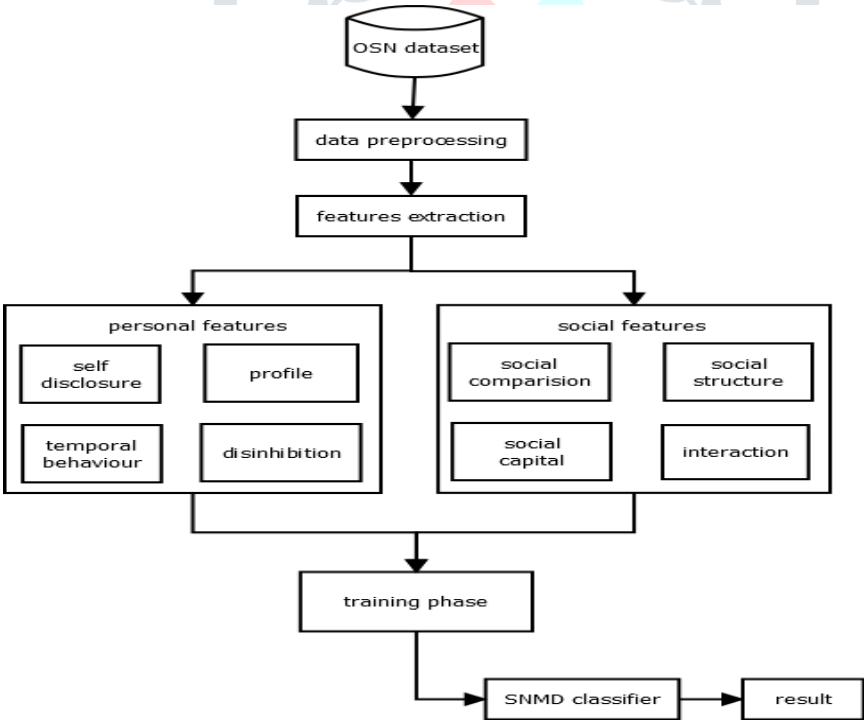

Fig. 1 System Architecture

IV. METHODOLOGY

Modules: Data Acquisitions / Data collection:

To our successive model, we initially gather a set of data sets utilizing diverse naming techniques, Cyber-Relationship (CR) Addiction, Net Compulsion (NC) and Information Overload (IO) techniques are used.

Modules: Feature Extraction:

We first focus on extracting features for design of SNMDD. This task is difficult for the following three reasons.

1. Lack of mental features: Low self-esteem, loneliness like mental factors are related of psychology. Thus, questionnaires are designed to reveal those factors for SNMD detection.

2. Heavy users vs. addictive users: To detect SNMDs, simply extract the usage of a user on social media as a feature for training SNMDD.

Modules: Social Interaction Features

We first extract a number of social interaction features to capture the user behavior on social media.

1. Social comparison based features (SComp) : Although most literature indicates that the majority of the news feed updates is positive, recent studies manifest that users who are exposed to positive posts from others on Facebook are inclined to feel envy and depressed due to social comparison. Feature is based on update of news feed.

2. Social diversity based features (SDiv) : Researchers have observed that diversity improves the depth of people thinking for both majority or minority.

3. Temporal behavior features (TEMP): Relapse is the state that a person is inclined to quickly revert back to the excessive usage of social media after an abstinence period, while tolerance is the state that the time spent by a person with SNMDs tends to increase due to the mood modification effect. It is worth noting that the above two mental states have been exploited to evaluate clinical addictions.

Module: Attribute Categorization

To address the issue of stress recognition, we initially characterize two arrangements of ascribes to quantify the distinctions of the stressed and non-stressed on user via web-based networking media stages.

V. CONCLUSION

In this system we propose system to better extract the latent factors from different sources to improve the accuracy. We conduct a user study with users to evaluate the effectiveness of the proposed SNMDD framework. To the best of our knowledge, this is the first dataset crawled online for SNMD detection. Also, we apply SNMDD on large-scale real datasets, and the results reveal interesting insights on network structures in SNMD types, which can be of interest to social scientists and psychologists. we propose support vector machine to better extract the latent factors from different sources to improve the accuracy.

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