

# Survey on Social Network Mental Disorder Detection via Online Social Media Mining using Machine Learning Framework

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## Abstract

The development in social network communication prompts the dangerous utilization. An increasing number of social networks mental disorders (SNMD), such as the dependence on the cybernetic relationship, the overload of information and the constriction of the network have been noticed recently. Currently, the symptoms of these mental disorders are passively observed which causes late clinical intervention. In this paper, argue that the mining of online social behavior offers the opportunity to actively identify the SNMD at an early stage. It is difficult to detect SNMD because the mental state cannot be observed directly from the records of online social activities. This approach, new and innovative for the practice of SNMD detection, it is not based on the self-disclosure of these mental factors through questionnaires psychology. Instead, to propose a framework of machine learning, or the detection of mental disorders in social networks (SNMD), which exploits the features extracted from social network data to accurately identify potential SNMD cases. Also use multiple sources learning in SNMD and proposing a new SNMD-based tensor model (STM) to improve accuracy. To increase the scalability of STM, also further improve efficiency with performance guarantees. This framework is evaluated through a user study with no of users of the network. Also perform a feature analysis and also apply SNMD in large-scale data sets and analyze the characteristics of the three types of mental disorder.

**Keywords:-** Online social network (OSN), mental disorder detection, feature extraction, SNMD Classifier.

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## Introduction

Psychological mental disorder is becoming a threat to people's health now a days. With the rapid pace of life, more and more people are feeling mentally disturb. It is not easy to detect user's mental disorder in an early time to protect user. With the fame of web-based social networking, individuals are used to sharing their day by day activities and interacting with friends via web-based networking media stages, making it possible to use online social network data for mental disorder detection. In this system, to find that users disorder state is closely related to that of his/her friends in social media, and to employ a large-scale dataset from real-world social platforms to systematically study the correlation of users' disorder states and social interactions. First define a set of mental disorder-related textual, visual, and social attributes from various aspects. Fast pace of life, progressively and more individuals are feeling stressed. Though Mental disorder itself is non-clinical and common in our life, excessive and chronic disorder can be rather harmful to people's physical and mental health.

Users' social interactions on social networks contain useful cues for stress detection. Social psychological studies have made two interesting observations. The first is mood contagion: a bad mood can be transferred from one person to another during social interaction. The second Social Interaction: people are known to social interaction of user. The advancement of social networks like Twitter, Facebook and Sina Weibo<sup>2</sup>, an ever increasing number of people will share their every day events and moods, and interact with friends through the social networks. We can classify using machine learning framework. Due to leverage both Facebook post content attributes and social interactions to enhance mental disorder detection. After getting disorder level, system can recommended user hospital for further treatment, we can show that hospital on map and system also recommended to take precaution for avoid stress.

### Literature Survey

1. In the paper of mental stress recognition from mobile phone data, weather conditions and individual traits. That day by day stress can be dependably perceived in the form of behavioral measurements, get information from the clients cell phone, for example, the climate conditions (information relating to short lived properties of the condition) and the identity attributes .In work environments, where stress has become a serious problem affecting the productivity, leading to occupational issues and causing health diseases. Our proposed system could be extended and employed for early detection of stress-related conflicts and stress contagion, and for supporting balanced workloads [1].
2. In this paper, they present the new deep CNN architecture, MaxMin-CNN, to better encode both positive and negative filter detections in the net. The system to adjust the standard convolutional square of CNN keeping in mind the end goal to exchange more data layer after layer while keeping some invariance inside the system. Fundamental thought is to abuse both positive and negative high scores got in the convolution maps. This conduct is acquired by altering the customary enactment work venture before pooling. Time required for this is more. It is time consuming process [2].
3. They are interested in the identity of clients. Identity has been appeared to be applicable to many sorts of cooperation's; it has been appeared to be helpful in anticipating work fulfillment, relationship achievement, and even inclination .They are intrigued in the identity of clients. Identity has been appeared to be applicable to many sorts of communications; it has been appeared to be valuable in foreseeing work fulfilment, expert and sentimental relationship achievement, and even inclination for various interfaces. And begin to answer more sophisticated questions about how to present trusted, socially-relevant, and well-presented information to users [3].
4. In paper learning robust uniform features for cross-media social data by using cross auto encoders. To solve learning models to address problem handle the cross-modality correlations in cross-media social elements. They propose CAE to learn uniform modality-invariant features, and they propose AT and PT phases to leverage massive cross media data samples and train the CAE. Learning robust uniform features for cross-media social data by using cross auto encoders take a more time [4].
5. This paper is about the user feel fine and searching the emotional web. On the usage of We Feel Fine to suggest a class of visualizations called Experiential Data Visualization, which

focus on immersive item-level interaction with data. The implications of such visualizations for crowd sourcing qualitative research in the social sciences. Repeated information in relevant answers requires the user to browse through a huge number of answers in order to actually obtain information [5].

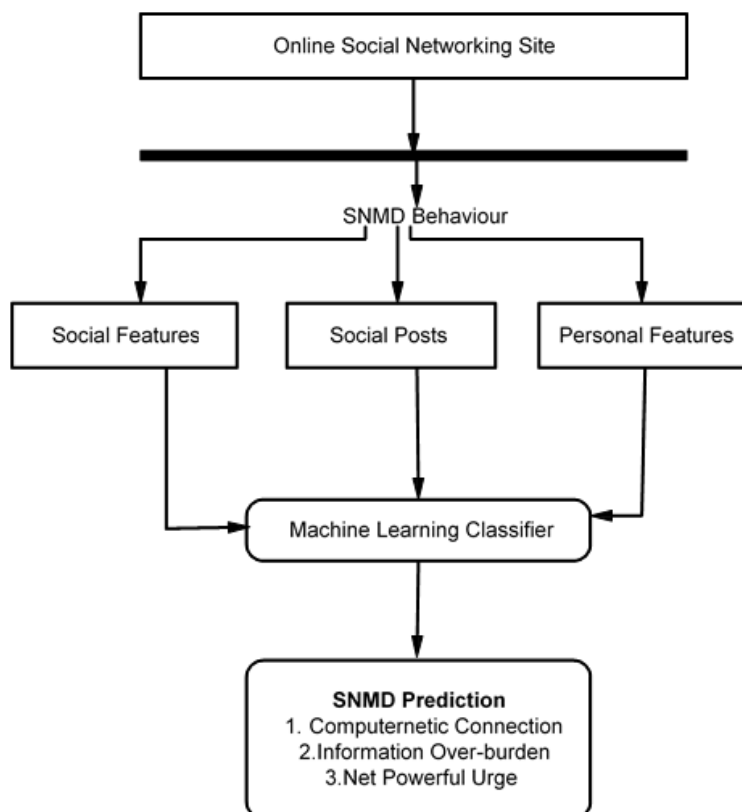
6. This paper is about an automatic stress detection method from cross-media micro blog data. Three-level framework for stress detection from cross-media micro blog data. By combining a Deep Sparse Neural Network to incorporate different features from cross-media micro blog data, the framework is quite feasible and efficient for stress detection. This framework, the proposed method can help to automatically detect psychological stress from social networks. The future scope plan to investigate the social correlations in psychological stress to further improve the detection performance [6].
7. To study about bridging the vocabulary gap between health seekers and healthcare knowledge with a global learning approach. A medical terminology assignment scheme to bridge the vocabulary gap between health seekers and healthcare knowledge. The scheme comprises of two components, local mining and global learning .Extensive evaluations on a real world dataset demonstrate that our scheme is able to produce promising performance as compared to the prevailing coding methods. They investigate how to flexibly organize the unstructured medical content into user needs-aware ontology by leveraging the recommended medical terminologies [7].
8. This is to studies about the influence maximization problem, which aims to find a small subset of nodes (users) in a social network that could maximize the spread of influence. A Pairwise Factor Graph (PFG) model to formalize the problem in probabilistic model, and they extend it by incorporating the time information, which results in the Dynamic Factor Graph (DFG) mode. The proposed approach can effectively discover the dynamic social influences. Parallelization of our algorithm can be done in future work to scale it up further [8].
9. Picture tags and world knowledge: learning tag relations from visual semantic sources studies the use of everyday words to describe images. The proposed tagging algorithm generalizes to unseen tags, and is further improved upon incorporating tag-relation features obtained via ICR. Techniques to better incorporate multi-word terms and out-of-vocabulary words; advanced NLP techniques for learning word relations from free-form text; evaluation of latent concept relation suggestion, and predicting the type of relations [9].
10. This paper is about a novel problem of emotion prediction in social networks. A method referred to as Mood cast for modeling and predicting emotion dynamics in the social network. The proposed approach can effectively model each user's emotion status and the prediction performance is better than several baseline methods for emotion prediction. It is used to due to the limited number of participants. For model learning, it uses a Metropolis-Hastings algorithm to obtain an approximate solution. Experimental results on two different real social networks demonstrate that the proposed approach can effectively model each user's emotion status and the prediction performance is better than several baseline methods for emotion prediction [10].

## System Study

### Proposed System

In proposed system approach, we formulate the task as classification problem to detect three types of social network mental disorder detection using Machine learning framework:

- 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
- iii) Information Overload, which is related to uncontrollable surfing



**Fig. System Architecture**

## Conclusion

In this paper, automatically identify potential online users with SNMDs. Psychological Mental Disorder is threatening people's health. It is non-trivial to detect Mental Disorder timely for proactive care. Therefore presented a framework for detecting users' psychological Mental Disorder states from users' monthly social media data, leveraging Facebook post ' content as well as users' social interactions. Employing real-world social media data as the basis, istudied the correlation between users' psychological Mental Disorder states and their social interaction behaviorsi recommended the user for health consultant or doctor. Also show the hospitals for further treatment on a graph which locate shortest path from current location user to that hospital. To recommended the user for health precaution send on mail for user interaction purpose.

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