A Comprehensive Study on Social Network Mental Disorder Detection

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Abstract: The popularity of social networking explosive growth leads to problematic usage. Social Network Mental disorders (SNMDs) have increased such as cyber-relationship, net compulsion and information overload. This paper provides an opportunity to actively identify SNMDs at an early stage by mining online social behavior. It can be challenging to detect SNMDs because mental status cannot be directly observed by social activity logs. Our approach is to provide new and innovative ideas for SNMDs detection which does not rely on self-revealing of those mental factors via questionnaires in psychology but we propose a machine learning framework that accurately identify potential cases of SNMDs.

Keywords: SNMD’s, NLP (Natural Language Processing), Word processing, IAD (Internet Addiction Disorder), Word encoding, Word embedding.

1. Introduction

The explosive growth in popularity of social networking and messaging applications have become a part of people daily lives. Our research focuses on discovering the knowledge behind the data for improving people life’s. Online social networks help in increasing social contacts but they may actually decrease the face-to-face interpersonal interactions in the real world. For example, studies point out that 1 in 8 people suffer from problematic internet use. SNMDs may incur depression, social withdrawal and other negative repercussions. These symptoms are important contents for diagnostic criteria for SNMDs. For example, an excessive use of social networking applications usually leads to loss of sense of time and feeling of anger, tension or depression when the applications are inaccessible. Today online SNMDs are treated at a late stage. We propose a new innovative approach which is new practice of SNMDs detection, by mining data logs of OSN users as an early detection system. We study the multi-source learning problem for SNMD detection, we improve the efficiency solution uniqueness by CP decomposition, and we provide theoretical results on non-divergence. These features capture important factors for SNMD detection.

2. Objective

Design and develop a machine-based analysis tool for mental state of users to predict mental disorder.

3. Problem Statement

1 in 8 people suffers from problematic internet use. Internet Addiction Disorder (IAD). A recent study shows a strong correlation between suicidal attempts and SNMDs. Mostly adolescents suffer from social media addiction. Negative impact emotional status, depression, compulsive behavior. We seek to contribute to the public mental health analysis by providing a platform that will identify a person who could potentially suffer from disorders. We will explore the potential of users who use social media to detect and diagnose the disorder in individuals. We will first employ crowdsourcing and compile a set of twitter users who are reported being diagnosed with depression, based on a standard study. We will measure behavioral attributes which are related to social media engagement, emotions, language and linguistic styles, ego network of the individual, and mentions of any antidepressant medications if prescribed. We will leverage these behavioral cues, to build a statistical classifier that provides us with the estimates of the risk of depression, before the reported onset. We believe our methods will be useful in developing tools which will be used for identifying major depression, it can be used by healthcare agencies; or on behalf of individuals, helping those suffering from depression to be more alert about mental health.
4. Proposed System

As for the next step, we plan to study the features extracted from multimedia contents by techniques on NLP and computer vision. We also plan to further explore new issues from the perspective of a social network service provider, e.g. Facebook or Instagram to improve the well-being of OSN users without compromising the user engagement. We will be developing a machine learning framework to capture the SNMDs, which are called Social Network Mental Disorder Detection (SNMDD). The framework can be used to provide an early alert for patients who might be suffering.

5. System Architecture

It is observed that the usage pattern of Social Media users including their time of usage, their posts, and other social activities reflects the mood of the user which can be very helpful to analyse the Mental State of the users and predicting mental disorder. Tracking mental disorder across twitter user. Detection Tweets for Depression to Detect users which might be a risk. Quantifying mental health signals in twitter. There are different types of disorders such as cyber relationship addiction, net compulsion, and information load. Cyber relationship shows the addictive behavior of a person for Building Online Relationship. Net compulsion shows the compulsive behavior of a person for online gaming or gambling. Information Overload is simply related to uncontrollable surfing on the internet. This study is to predict young adults use of SNSs and their addictive. tendency towards the use of SNSs from their personality and levels of their self-esteem.

References

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