

# Prediction of Mental Disorder Issues In Player unknown's Battlegrounds (PUBG) using Ridge Regression (RR) and Multi Layer Perception (MLP) Model

R. Naveen<sup>1</sup> and Dr. C. Meenakshi<sup>2</sup>

PG Student, Department of Computer Applications<sup>1</sup>

Professor, Department of Computer Applications<sup>2</sup>

Vels Institute of Science Technology and Advanced Studies, Pallavarm, Chennai, India

22304228@vistas.ac.in and meenasi.c@gmail.com

**Abstract:** In the last several decapods, there have been more cases than usual of identifying mental disease and depression. On Twitter, Facebook, and online forums, you can find signs of mental illness, and automatic systems are getting better and better at finding inactivity and other mental diseases. This study surveys recent research that sought to use social media to identify depression and other mental illnesses. The use of screening surveys, their community distribution of analyses on Twitter, or through their participation in online forums have already been used to draw attention to mentally ill individuals. They have also been shown to be easily identifiable by patterns in their language and online behaviour. Many automated detection techniques can be used to identify depressed users on social media. . In addition a number of authors experience that various Social Networking Sites activities may be linked to low self-confidence, particularly in young people and adolescents. In our project the mental disorder is predicted by algorithms namely Ridge Regression (RR) and Multi Layer Perceptron (MLP). We can prove that MLP works better than RR algorithm in terms of accuracy.

**Keywords:** Machine learning, ridge regression(RR), Multi layer perceptron (MLP)

## I. INTRODUCTION

In the statistical context, Machine Learning is defined as an application of artificial intelligence where available information is used through algorithms to process or assist the processing of statistical data. While Machine Learning involves concepts of automation, it requires human guidance. Machine Learning involves a high level of generalization in order to get a system that performs well on yet unseen data instances. Machine learning is a relatively new discipline within Computer Science that provides a collection of data analysis techniques. Some of these techniques are based on well-established statistical methods and principal component analysis) while many others are not. Most statistical techniques follow the paradigm of determining a particular probabilistic model that best describes observed data among a class of related models. Similarly, most machine learning techniques are designed to find models that best fit data (i.e. they solve certain optimization problems), except that these machine learning models are no longer restricted to probabilistic ones.

## INTRODUCTION TO PROJECT

Reports that approx.5 crore people suffer from Depression. The WHO report estimates that about 322 million people are suffered from depression over worldwide and nearly half of the populations are lived in South East Asian and Western Pacific Region. The total number of people that are living with depression are estimated increase by 18.4% between 2015-2019. WHO report in September 2019 suggests that 75% suicides are committed in low and middle income countries. Lancet report in 2019 reports that India has the highest suicide rates in youth age between 15-29. National Crime Records Bureau reports in 2013, 2471 students commit suicide because of failure in examination.

Depression is a leading cause of disability worldwide. Globally, an estimated 350 million people of all ages suffer from depression. Depressed people have various depression symptoms manifested by distinguishing behaviors. In clinical diagnosis, psychological doctors often make face-to-face interviews referring to the commonly used Diagnostic and Statistical Manual of Mental Disorders criteria. Nine classes of depression symptoms are defined in the criteria, describing the distinguishing behaviors on daily lives.

### **1.1 OBJECTIVE OF PROJECT**

We extract the game and player statistics of PUBG players from Asian countries and then run several state of the art supervised machine learning models to predict the occurrence of IGD, ADHD, and GAD. Initial experiments and results show that we are able to predict IGD, ADHD, and GAD.

Main Objective of the project are:

- To predict the social media mental disorder with more accuracy. Less time prediction.
- Should be applicable in all datasets to predict the stress. Low complex system

## **II. EXISTING SYSTEM**

Ridge regression is a method of estimating the coefficients of multiple-regression models in scenarios where the independent variables are highly correlated. It has been used in many fields including econometrics, chemistry, and engineering. Also known as Tikhonov regularization, named for Andrey Tikhonov, it is a method of regularization of ill-posed problems. It is particularly useful to mitigate the problem of multi collinearity in linear regression, which commonly occurs in models with large numbers of parameters. In general, the method provides improved efficiency in parameter estimation problems in exchange for a tolerable amount of bias (see bias–variance tradeoff). Ridge regression was developed as a possible solution to the imprecision of least square estimators when linear regression models have some multi collinear (highly correlated) independent variables—by creating a ridge regression estimator (RR). This provides a more precise ridge parameters estimate, as its variance and mean square estimator are often smaller than the least square estimators previously derived.

### **2.1 PROBLEM STATEMENT**

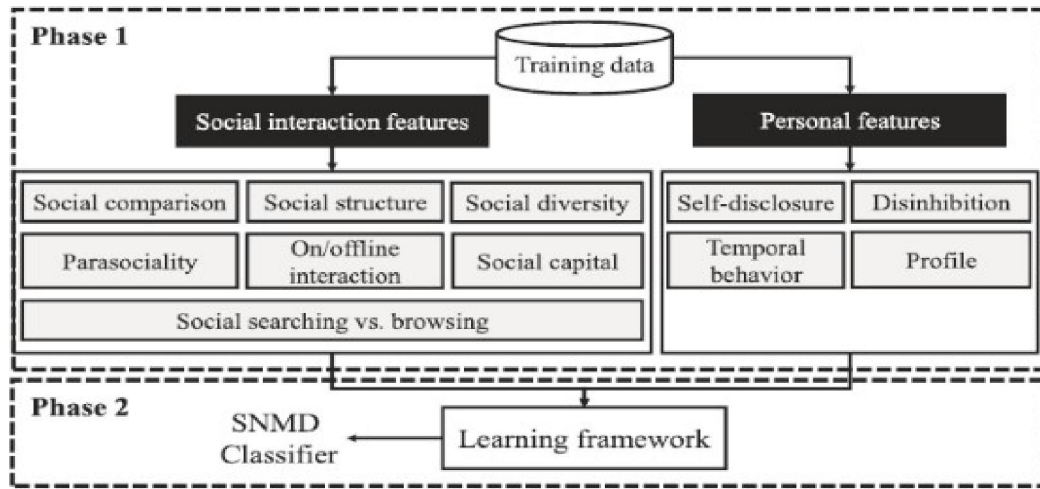
- Not Economical
- More time consuming process.
- Early prediction of users is not possible. Accuracy in stress level prediction is very less. Cannot be implemented in all datasets

### **2.2 PROPOSED SYSTEM**

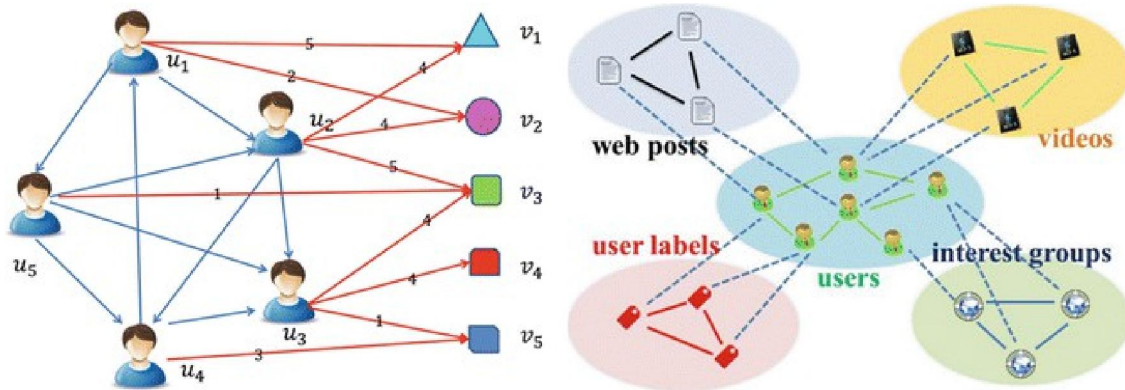
#### **Multilayer Perceptron (MLP):**

A multilayer perceptron (MLP) is a class of feed forward artificial neural network (ANN). The term MLP is used ambiguously, sometimes loosely to mean *any* feed forward ANN, sometimes strictly to refer to networks composed of multiple layers of perceptrons (with threshold activation); Multilayer perceptrons are sometimes colloquially referred to as "vanilla" neural networks, especially when they have a single hidden layer. An MLP consists of at least three layers of nodes: an input layer, a hidden layer and an output layer. Except for the input nodes, each node is a neuron that uses a nonlinear activation function. MLP utilizes a supervised learning technique called back propagation for training. Its multiple layers and non-linear activation distinguish MLP from a linear perceptron. It can distinguish data that is not linearly separable.

**III. ARCHITECTURE DIAGRAM**



**USECASE DIAGRAM**



**MODULES**

- Data Collection
- Data Preprocessing
- Feature Extraction
- Classification.

**Data Collection**

To make depression detection via social media, we constructed two datasets of depression and non-depression users on Twitter, which has mature APIs and is prevalent around the world.

Given a Twitter user, we collected the profile information of the user and an anchor tweet to infer the mental state. As people should be observed for a period of time according to clinical experience, all the other tweets published within one month from the anchor tweet were also obtained

**Data Preprocessing**

Before feature extraction, we noticed that the words are flexible and variant in the raw data of social media, which causes great difficulties in word matching and semantic analysis.

Feature Extraction

Number of tweets. We extracted the number of tweets posted historically and recently by the given user to assess the user's activeness.

Social interactions. We considered the social interaction features such as the number of the user's followings and followers to describe users' online social behaviors.

#### **Disadvantage of Existing System**

- Cannot be implemented in all datasets.
- Less Accuracy in predicting the stress level.
- More time consuming process.
- Complex model

#### **IV. CONCLUSION**

This project aims to make timely depression detection via harvesting social media. With the benchmark depression and non-depression datasets as well as well-defined discriminative depression-oriented feature groups, we proposed a multimodal depressive dictionary learning method to detect depressed users in Twitter. We then analyzed the contribution of the feature modalities and detected depressed users on a large-scale depression-candidate dataset to reveal some underlying online behaviors discrepancy between depressed users and non-depressed users on social media. Since online behaviors cannot be ignored in modern life, we expect our findings to provide more perspectives and insights for depression researches in computer science and psychology.

#### **REFERENCES**

- [1]. K. Young, M. Pistner, J. O'Mara, and J. Buchanan. Cyber-disorders: The mental health concern for the new millennium. *Cyberpsychol. Behav.*, 2019..
- [2]. J. Block. Issues of DSM-V: internet addiction. *American Journal of Psychiatry*, 2019.
- [3]. K. Young. Internet addiction: the emergence of a new clinical disorder, *Cyberpsychol. Behav.*, 2019
- [4]. I.-H. Lin, C.-H. Ko, Y.-P. Chang, T.-L. Liu, P.-W. Wang, H.-C. Lin, M.-F. Huang, Y.-C. Yeh, W.-J. Chou, and C.-F. Yen. The association between suicidality and Internet addiction and activities in Taiwanese adolescents. *Compr. Psychiat.*, 2019.
- [5]. Y. Baek, Y. Bae, and H. Jang. Social and parasocial relationships on social network sites and their differential relationships with users' psychological well-being. *Cyberpsychol. Behav. Soc. Netw.*, 2019.
- [6]. D. La Barbera, F. La Paglia, and R. Valsavoia. Social network and addiction. *Cyberpsychol. Behav.*, 2019.
- [7]. K. Chak and L. Leung. Shyness and locus of control as predictors of internet addiction and internet use. *Cyberpsychol. Behav.*, 2019.
- [8]. K. Caballero and R. Akella. Dynamically modeling patients health state from electronic medical records: a time series approach. *KDD*, 2019.
- [9]. L. Zhao and J. Ye and F. Chen and C.-T. Lu and N. Ramakrishnan. Hierarchical Incomplete multi-source feature learning for Spatiotemporal Event Forecasting. *KDD*, 2019.
- [10]. E. Baumer, P. Adams, V. Khovanskaya, T. Liao, M. Smith, V. Sosik, and K. Williams. Limiting, leaving, and (re)lapsing: an exploration of Facebook non-use practices and experiences. *CHI*, 2019.
- [11]. R. Jain and N. Abouzakhar. A comparative study of hidden markov model and support vector machine in anomaly intrusion detection. *JITST*, 2019.
- [12]. C. Tan, L. Lee, J. Tang, L. Jiang, M. Zhou, and P. Li. User-level sentiment analysis incorporating social networks. *KDD*, 2019.
- [13]. R. Collobert, F. Sinz, J. Weston, and L. Bottou. Large scale transductive svms. *JMLR*, 2019.
- [14]. L. Leung. Net-generation attributes and seductive properties of the internet as predictors of online activities and internet addiction. *Cyberpsychol. Behav. Soc. Netw.*, 2019.
- [15]. J. Cacioppo, J. Fowler, and N. Christakis. Alone in the crowd: the structure and spread of loneliness in a large social network. *J. Pers. Soc. Psychol.*, 2019