STRESS PREDICTION IN WORKING EMPLOYEE

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Abstract: Working-class people frequently suffer from mental health illnesses due to stress. In the past, there have been questions expressed about the same in numerous researches. According to a study conducted by the industry association Assocham, more than 42 percent of working professionals in the Indian private sector experience depression or generalized anxiety disorder as a result of their long work hours and demanding deadlines. According to a 2018 Economic Times story citing a poll by Optum [1] that found that half of working professionals in India experience stress, this number of people is growing. Up to 8 lakh employees from more than 70 significant enterprises, each employing 4,500 or more people, responded to the survey, which was taken into account. It is crucial to prioritize keeping the workplace stress-free. It will increase the likelihood that such measures are successful if employees who would require such assistance are identified early. To aid working professionals in managing stress for their mental health, a number of measures can be implemented, including counselling support, career advice, stress management exercises, and health awareness campaigns.

Keywords: Clustering, Random Forest, Decision tree, graph representation, SVM.

I. INTRODUCTION

Today's workforce is becoming more and more stressed out at work due to a variety of factors, including organizational future, self-cognition, interpersonal, and attachment. Long-term stress can affect a teen's health and development by causing anxiety, withdrawal, hostility, or poor coping mechanisms including drug and alcohol use. Therefore, it's critical that both employees and their parents/teachers are aware of and able to control their stress before it worsens and starts to affect their health. Our ability to quickly and covertly detect a teenager's stress by observing his or her emotional content and behaviors is made possible by the present social media micro-blog. This study outlines a framework to more accurately estimate a teen's level of future workplace stress from their microblog and proposes solutions to the problems (data incompleteness and multifaceted prediction) utilizing multi-variant time series prediction methods with machine learning. Our prediction system also takes into account impending events that may have an impact on teenagers' stress levels.

II. RELATED WORK

P. Iswarya, [1] Through their weekly emotions, users' online moods, including angry, sad, joyful, and depressed states, can be identified. An identified emotion can be divided into positive and bad feelings, discovering the user's stress level through ongoing, unfavorable employee data, and telling them of their stress level to keep them from committing suicide or engaging in other violent acts. Facebook's language pattern classification technology provides a wealth of data for data analysis. utilizing the previously mentioned data and features obtained using a convolution neural network model from several modalities. The various classifiers for emotion classification are fed the retrieved features. According to experimental findings, accuracy rate of the Random Forest (RF) model is higher than that of the Probabilistic Neural Network (PNN) and Support Vector Machine (SVM) models.

S. Venkateswaran, [2] Results The study of emotional wellness phenomena in publicly available social networking platforms like Facebook and the global work allocation. A novel hybrid model is then proposed after defining a set of textual, visual, and social qualities connected to stress from multiple perspectives. However, there have been few analyses of other illnesses affecting mental wellbeing. The work has shown the value of online social information for considering depression. Accessing a user's posts on their Facebook profile is not simple. The system must receive the access token from the Facebook developer website in order to obtain the user data from Facebook. The API serves as a middle-man system that enables the system to analyse user data from Facebook pages. According on the user's stress level, the system will also assist in recommending users various links for psychiatric counselling facilities, soothing music, or articles to help relieve their stress

Manimegalai, [3] In this study, we discover a strong relationship between a client's stress level and that of his or her online social networking friends. To effectively consider this relationship, we used a large-scale dataset from actual social settings. In order to use emotion content and social collaboration data for stress recognition, we first characterize numerous stress-related literary, visual, and social properties from a variety of perspectives. Then, we propose a novel hybrid model that combines a factor chart display with a convolutional neural network.

III. METHODOLOGY

A. SVM

Both classification and regression are performed using supervised machine learning techniques known as Support Vector Machines (SVM). The ideal application for them is classification, even though we refer to them as regression issues. The SVM approach seeks a hyperplane in N-dimensional space that categorises the data points with clarity. The size of the hyperplane depends on the number of elements. The hyperplane is only a line when there are just two input elements. If there are three input elements, the hyperplane transforms into a 2D plane. It is hard to imagine when there are more than three aspects

B. Random Forest

Best machine learning algorithm Random Forest is one of the methods used in supervised learning. It is applicable to machine learning (ML) issues including both regression and classification. It is built on the idea of ensemble learning, a technique for mixing different classifiers to solve complex issues and enhance model performance. As the name suggests, Random Forest is a classifier that increases the expected accuracy of the dataset by averaging many decision trees applied to different subsets of the provided data. Instead of depending exclusively on one decision tree, the random forest uses forecasts from all decision trees and predicts the result based on the votes of the majority of projections.

IV. IMPLEMENTATION

Using both the content of emotions and user social interactions, the research presented a comparative analysis for calculating individuals' psychological stress levels based on their weekly social media use. Using real-world data from social media, we looked at how users' psychological stress levels and social interaction habits were related. The user's emotions are predicted in this project in a variety of ways, and more negative emotions signal psychological stress to the user.
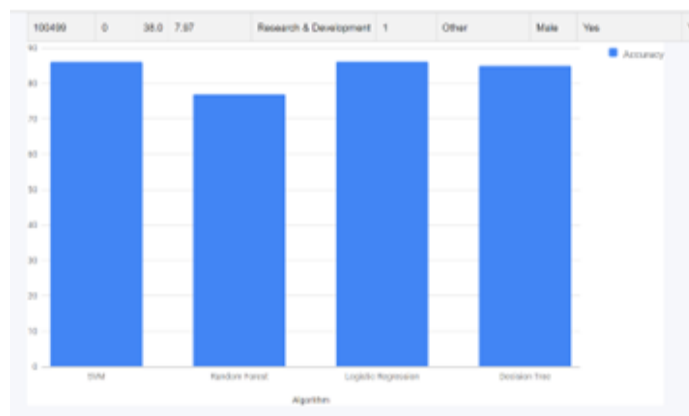

Fig : In this figure show the stress predicting accuracy of different algorithm

V. RESULT AND ANALYSIS

Sentences are first collected and then all of them are extracted utilizing emotions. After the phrases have been extracted and the part-of-speech tagging has been completed to identify the sentences, the results have been categorized. Scores have been computed for each sentiment with each of the polarities. We suggested a strategy in which we extracted employee data from global task allocation and classified every piece of data with various emotions. We are able to determine the class of each emotion as well as the structure of each employee's data. It has been emotional after categorizing all of the employee data with each of the sentences. Utilizing each feeling is simple with the aid of

sentiment extraction, in order to make it simple categorize each stress rate level.then compressed into a single probability score vector that is organized along the depth dime

VI. CONCLUSION

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