Phase 2: Select a research question and dataset.

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Today mental health is becoming a more common problem. However, evaluation of mental well-being is extremely important to understanding and providing therapeutic solutions. Diagnostics are complicated tasks and misdiagnosis can result in serious problems if a mental disorder is not properly detected. Can we recognize mental health issues accurately by using data mining techniques?

The data has been collected from Kaggle by Open Sourcing Mental Illness, LTD. Survey data about mental health attitudes are included in this dataset. Which then has been analyzed and pre-processed. The data contains different labels such as age, gender, country, self-employee, family history, work interference, seek help, etc. For better prediction, we have label encoded the data.

We plan to implement a Decision tree, Random Forest, Naïve Bayes to predict analysis for the chosen project. A decision tree algorithm is used to solve classification and regression problems. It is a structured learning algorithm. Random Forest algorithm is a simple decision tree-based algorithm that consists of a large number of decision trees working together. Both the algorithms are analyzed to find various insights from the dataset. For deriving the final outcome, the steps to be followed are collecting the data, data processing, encoding the data, train above mentioned algorithms using the dataset, and prediction. A model is created based on the results. We expect the accuracy for the Decision tree, Random Forest, Naïve Bayes as 82%, 79%, and 78% respectively based on the literature review.[4]

Dataset Reference: https://www.kaggle.com/osmi/mental-health-in-tech-survey

References:

1.https://ieeexplore-ieee-org.unh-proxy01.newhaven.edu/stamp/stamp.jsp?tp=&arnumber=8782395 | Machine Learning Techniques for Stress Prediction in Working Employees

2. https://ieeexplore-ieee-org.unh-proxy01.newhaven.edu/stamp/stamp.jsp?tp=&arnumber=9410139 | Design of Data Mining and Evaluation System for College Students' Mental Health

3. https://cphfs.in/myadmin/Submitted_pdf/IJLCR-0008up.pdf | Predictive analysis using classification techniques in healthcare domain

4.file:///C:/Users/Vaishnavi%20Salaskar/Desktop/Classification_Algorithms_based_Mental_Health_Prediction_using_Data_Mining.pdf | Classification Algorithms based Mental Health Prediction using Data Mining.