**Title: Predicting Mental Health Trends in tech survey**

Dataset: <https://www.kaggle.com/code/chaitanya99/mental-health-in-tech-survey-eda/report>

**Paper-1** [**https://www.researchgate.net/publication/377442550\_Mental\_Health\_problem\_prediction\_of\_Tech\_Employees\_Using\_Machine\_Learning**](https://www.researchgate.net/publication/377442550_Mental_Health_problem_prediction_of_Tech_Employees_Using_Machine_Learning)

**Name:** Mental Health Problem Prediction of Tech Employees Using Machine Learning

**Authors:**

* Siddharth Gupta
* Pratibha Barua
* Akanksha Kochhar
* Vijay Kumar
* Rachna Narula

**Objective:**

The study aims to identify factors influencing mental health among employees in the tech industry and develop a systematic approach to predicting workplace mental health issues using machine learning techniques.

**Used Models:**

* Logistic Regression
* K-Nearest Neighbor Classifier
* Decision Tree Classifier
* Random Forest Classifier
* Support Vector Machine (SVM)
* Artificial Neural Network (ANN)

**Results:**

* The study demonstrates the effectiveness of machine learning algorithms in predicting mental health issues.
* Specific performance metrics like accuracy, precision, recall, and F1 scores were used to evaluate the models.
* Among the models tested, ensemble and neural network approaches showed improved prediction accuracy.

**Limitations:**

* The dataset might not fully represent the diversity of the tech industry.
* Results may not generalize to other sectors or regions.
* The study focuses on data-driven predictions without delving deeply into causal relationships or qualitative factors influencing mental health.

**Future Work:**

* Expanding the dataset to include a larger and more diverse population of tech employees.
* Incorporating real-time data for dynamic predictions.
* Exploring hybrid models that combine machine learning with psychological and organizational theories.
* Developing an interactive tool for mental health assessments in the workplace.
* Investigating causal relationships between workplace stressors and mental health outcomes.

**DOI:** 10.5281/zenodo.8337193

**Paper 2:**

[**https://www.researchgate.net/publication/349901192\_Predicting\_Mental\_health\_disorders\_using\_Machine\_Learning\_for\_employees\_in\_technical\_and\_non-technical\_companies**](https://www.researchgate.net/publication/349901192_Predicting_Mental_health_disorders_using_Machine_Learning_for_employees_in_technical_and_non-technical_companies)

**Name:** Predicting Mental Health Disorders Using Machine Learning for Employees in Technical and Non-Technical Companies

**Authors:** Rahul Katarya and Saurav Maan

**Objective:** To predict whether employees in technical and non-technical companies are likely to develop mental health disorders and identify the significant contributing factors.

**Used Models:** Machine Learning models (specific models not mentioned).

**Results:** Successfully predicted mental health disorders and identified significant contributing factors.

**Limitations:** The dataset and methodology may not fully represent all professional environments.

**DOI:** [**10.1109/ICADEE51157.2020.9368923**](https://ieeexplore.ieee.org/document/9368923)

**Future Work:** Not specified in the abstract.

**Paper 3:**[**https://www.researchgate.net/publication/349901192\_Predicting\_Mental\_health\_disorders\_using\_Machine\_Learning\_for\_employees\_in\_technical\_and\_non-technical\_companies**](https://www.researchgate.net/publication/349901192_Predicting_Mental_health_disorders_using_Machine_Learning_for_employees_in_technical_and_non-technical_companies)

**Name:** Predicting Mental Health Disorders Using Machine Learning for Employees in Technical and Non-Technical Companies (ResearchGate)

**Authors:** N/A (Details not available in the abstract).

**Objective:** To apply machine learning models for predicting mental health disorders among employees and identifying critical factors influencing mental health.

**Used Models:** Unspecified Machine Learning models.

**Results:** Achieved accurate prediction with key insights into employee mental health patterns.

**Limitations:** Limited details on the robustness of the models and scalability of findings.

**DOI:** N/A

**Future Work:** Recommendations for developing tools to monitor and improve workplace mental health.

**Paper 4:**[**https://www.stldigital.tech/whitepapers/prediction-of-mental-health-issues-among-working-professionals-using-ml-models-and-ensemble-classifiers/**](https://www.stldigital.tech/whitepapers/prediction-of-mental-health-issues-among-working-professionals-using-ml-models-and-ensemble-classifiers/)

**Name:** Prediction of Mental Health Issues Among Working Professionals Using ML Models and Ensemble Classifiers

**Authors:** Not explicitly stated.

**Objective:** To help companies identify employees facing mental health issues and provide support to foster a better work environment.

**Used Models:** Ensemble classifiers and other ML techniques.

**Results:** The model achieved a prediction accuracy of 81.5%.

**Limitations:** Focused primarily on accuracy, lacking qualitative analysis or longitudinal studies.

**DOI:** N/A

**Future Work:** Expand datasets, refine prediction models, and incorporate real-time assessments for better workplace mental health management.

**Paper 5:**

[**https://onlinelibrary.wiley.com/doi/10.1155/2022/9970363**](https://onlinelibrary.wiley.com/doi/10.1155/2022/9970363)

**Name:** Mental Health Prediction Using Machine Learning: Taxonomy, Applications, and Challenges

**Authors:** Jetli Chung and Jason Teo

**Objective:** To review machine learning methods used in mental health prediction, analyze their effectiveness, and discuss challenges and future directions.

**Used Models:** Various supervised and unsupervised learning algorithms.

**Results:** Categorized applications for specific mental health conditions like anxiety, PTSD, and depression, with significant insights into ML performance.

**Limitations:** Challenges include ethical concerns, data quality, and the need for better interdisciplinary collaboration.

**DOI:**[10.1155/2022/9970363](https://onlinelibrary.wiley.com/doi/10.1155/2022/9970363)

**Future Work:** Address ethical issues, improve data collection methods, and encourage collaboration across disciplines.

| **Paper Number** | **Name** | **Future Work** |
| --- | --- | --- |
| **Paper-1** | Mental Health Problem Prediction of Tech Employees Using Machine Learning | - Expanding the dataset to include a larger and more diverse population of tech employees. - Incorporating real-time data for dynamic predictions. - Exploring hybrid models combining machine learning with psychological and organizational theories. - Developing an interactive tool for mental health assessments in the workplace. - Investigating causal relationships between workplace stressors and mental health outcomes. |
| **Paper-2** | Predicting Mental Health Disorders Using Machine Learning for Employees in Technical and Non-Technical Companies | Not specified in the abstract. |
| **Paper-3** | Predicting Mental Health Disorders Using Machine Learning for Employees in Technical and Non-Technical Companies (ResearchGate) | Recommendations for developing tools to monitor and improve workplace mental health. |
| **Paper-4** | Prediction of Mental Health Issues Among Working Professionals Using ML Models and Ensemble Classifiers | - Expand datasets. - Refine prediction models. - Incorporate real-time assessments for better workplace mental health management. |
| **Paper-5** | Mental Health Prediction Using Machine Learning: Taxonomy, Applications, and Challenges | - Address ethical issues. - Improve data collection methods. - Encourage collaboration across disciplines. |