Title:

Predicting Mental Health Analysis and Depression Using Random Forest and K-Nearest Neighbor: A Comparative Study with Other Algorithms for Enhanced Mental Well-being

Abstract:

This study delves into the prediction of mental health analysis and depression utilizing machine learning, specifically focusing on the Random Forest and K-Nearest Neighbor (KNN) algorithms. By comparing these methods with other algorithms, this research aims to provide insights for improving mental well-being.

Keywords:

Random Forest, K-Nearest Neighbor, Mental Health Analysis, Depression, Machine Learning, Comparative Study

Introduction:

Mental health and depression represent significant challenges globally, demanding effective predictive tools for timely intervention and enhanced well-being. Leveraging machine learning algorithms such as Random Forest and K-Nearest Neighbor (KNN) offers promising avenues for predictive modeling in mental health. This study aims to compare the efficacy of these algorithms with other approaches, shedding light on their potential for improving mental health outcomes.

Embedded Vector Representation of Clinical Diagnosis and Treatment Records:

Incorporating structured clinical records into predictive models requires robust representation methods. This study employs embedded vector models based on Skip-gram to transform heterogeneous clinical data into structured representations, facilitating effective prediction of mental health outcomes.

Model Comparison and Evaluation:

Comparative analysis of recall rates and mean average precision (MAP) values under different parameters provides insights into the performance of the Random Forest and KNN algorithms. By assessing these metrics alongside other models, this study evaluates the predictive power of the proposed algorithms in mental health analysis and depression prediction.

Conclusion:

The findings suggest that the Random Forest and KNN algorithms exhibit promising performance in predicting mental health analysis and depression. Comparative analysis highlights their effectiveness compared to other methods, underscoring their potential for enhancing mental well-being through early detection and intervention.

References:

[Include relevant references in the format similar to the provided example references in the original document.]