

Human Stress Detection Based on Sleeping Habits using Machine Learning Algorithms

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Abstract: Stress is a mental or emotional state brought on by demanding or unavoidable circumstances, also referred to as stressors. In order to prevent any unfavourable occurrences in life, it is crucial to understand human stress levels. Sleep disturbances are related to a number of physical, mental, and social problems. This study's main objective is to investigate how human stress might be detected using machine learning algorithms based on sleep-related behaviours. The obtained dataset includes various sleep habits and stress levels. Six machine learning techniques, including Multilayer Perception (MLP), Random Forest, Support Vector Machine (SVM), Decision Trees, Naïve Bayes and Logistic Regression were utilized in the classification level after the data had been pre-processed in order to compare and obtain the most accurate results. Based on the experiment results, it can be concluded that the Naïve Bayes algorithm, when used to classify the data, can do so with 91.27% accuracy, high precision, recall, and measure values, as well as the lowest mean absolute error (MAE) and root mean squared error rates (RMSE). We can estimate human stress levels using the study's findings, and we can address pertinent problems as soon as possible.

Keywords: Stress

