Using machine learning algorithms classified depressed patients and normal people.

Gaurav, Pawan Whig

[1]Research Intern
[1]The Research World, New Delhi, India
[1] Gaurav97@gmail.com*
* corresponding author

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Correspondence:
E-mail: Gaurav97@gmail.com

ABSTRACT

Diagnosis of depression in its early treatable phases is critical and may possibly save a patient's life. In this research, we investigate nonlinear analysis of EEG signals for differentiating between depression patients and healthy controls. This study included 45 unmedicated depressive individuals and 45 healthy volunteers. EEG signal was used to extract the power of four EEG bands as well as four nonlinear characteristics such as detrended fluctuation analysis (DFA), higuchi fractal, correlation dimension, and lyapunov exponent. The classifiers k-nearest neighbour, linear discriminant analysis, and logistic regression are then employed to differentiate between the two groups. Correlation dimension and LR classifier, among other nonlinear characteristics, achieve the highest classification accuracy of 83.3 percent. All nonlinear characteristics are pooled and applied to classifiers for further development.

Contact Editor for Full paper Contact @ijsdcs.com

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