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Classification of epileptic seizure using rotation forest ensemble method with 1D-LBP feature extraction

J Shanmugasundaram [a] ✉, G Raichal [b] ✉, G Dency Flora [c] ✉, P Rajasekaran [d] ✉, V Jeevanantham [e] ✉

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Abstract

In this article, an approach for extracting and choosing aspects of unprocessed EEG signals using the one-dimensional local binary pattern (1D-LBP) is presented. In view of making the right decision on different issues, notably in the medical applications like epilepsy diagnosis, a functional approach to extracting the best aspects of EEG signals has been developed. There are two major steps in the suggested method: First, features are extracted and selected using enhanced 1D-LBP model that combines 1D-LBP adjacent models with PCA (1D-LBPc2p). The second step involves classification using random rotating forest ensemble classification algorithm. A comparison of the proposed method with 13 different reported methodologies, comprising uniform and non-uniform 1D-LBP, is carried out. In comparison to other models and classifiers, the results show that the technique described in proposed method has high detection rate as well as competence by giving high accuracy. The method provided in this paper can be used to extract features and pick EEG signals and data sets from a variety of sources.

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Keywords

EEG classifier; Epilepsy; Feature extraction; PCA; 1 D-local binary pattern

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