

ABSTRACT

Sleep stages classification is one of the most important methods for diagnosis in psychiatry and neurology. This process discusses on the changes in the electrical activity of the human brain related to distinct sleep disorders. The ECG data has been collected from Physio-Net database. The purpose is to detect the different human sleep disorders through ECG signal with time-frequency analysis by receiving information from the internal changes of brain state. Several ECG records have been collected for these sleep disorders and analyzed using discrete wavelet transform and RR interval. The discrete wavelet transform (DWT) is used to extract different significant features from the analyzed signal by computing the sub-band coefficients and evaluating statistical measures like energy, variance, waveform length and standard deviation which are used to detect different sleep disorders. The RR interval, the time elapsed between two successive R waves of the QRS signal on the electrocardiogram is a function. Comparing to existing system they used the algorithm and obtained the values with low sensitivity 82%, specificity 85.7%, accuracy with 84.3% to overcome we used CNN algorithm and obtained better sensitivity 94%, specificity 99.94%, accuracy with 95%.