



Efficient Removal of Artifacts from EEG SIGNAL Using Enhanced Hybrid Learning Method

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KEYWORDS IANFIS. Monitoring System. Motion Artifacts. Signal Processing. PSO

ABSTRACT In this paper, the analysis and removal of artifacts is done by the proposed technique. Normally, ECG is one of the components of artifacts source and EEG is mixed by various artifacts and affects the electroencephalographic data. For further clinical analysis the data preparation is important to minimize the artifacts. In proposed method, Improved Adaptive Neuro-Fuzzy Inference System (IANFIS) and Improved ANFIS-Particle Swarm Optimization (IANFIS-PSO) algorithms are used to separate the signals of ECG and EEG for eliminating artifacts and to intensify the estimation of EEG signal quality. The pre-processing is done by ennobled quantum based genetic algorithm for fast process of optimization and removal of noise interference. The simulation result shows the improvement in Signal-to-Noise Ratio (SNR), minimum Mean-Square Error (MSE) along with the Power Spectrum Density (PSD) plot, which are used to measure the performance comparison of proposed with existing algorithm. The prospective method performs with more appropriate process of enhanced hybrid learning method and outperforms in minimizing the artifacts of ECG from the corrupted signals of EEG.