A Hybrid Approach for Artifacts Removal from EEG Recordings

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Authors:
Alaa Eldeen M. Helal, Ahmed Farag Seddik, Ayat Allah F. Hussein

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Abstract

The electroencephalogram (EEG) is a widely used traditional procedure for diagnosing, monitoring and managing neurological disorders. Many artifact types that often contaminate EEG remain a key challenge for precise diagnosis of brain dysfunctions and neurological disorders. Hence, artifact removal is intuitively required for accurate EEG analysis and treatment. This paper presents a new extensive method that can remove a wide variety of EEG artifacts based mainly on Template Matching approach including multiple signal-processing tools. The method was evaluated and validated on real EEG data, giving promising results that offer better capabilities to neurophysiologists in routine EEG examinations and diagnosis.

References

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Index Terms

Computer Science  Signal Processing

Keywords

Electroencephalogram (EEG), artifacts removal, independent component analysis, wavelet, cosine similarity measure