

Peer Review

Review of: "STEAM-EEG: Spatiotemporal EEG Analysis with Markov Transfer Fields and Attentive CNNs"

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The paper is a strong contribution to the field of EEG analysis. Its innovative combination of SSA, MTF, and CNNs addresses critical challenges in spatiotemporal EEG analysis and sets a foundation for future work. While computational complexity and generalizability require further exploration, the methodology and results are robust and promising.

Specific Comments

Abstract:

The abstract provides a concise overview but could better emphasize the practical implications of the work.

Introduction:

The introduction clearly outlines the problem and highlights the novelty of the approach. However, more emphasis on the practical challenges in real-world EEG applications would be beneficial.

Methodology (Section 3):

The explanation of SSA decomposition and MTF imaging is thorough. The modified attention mechanism is innovative, but further clarity on its computational efficiency would enhance understanding.

Figures (e.g., Figure 2) are informative and complement the text well.

Results (Section 4):

Table 1 effectively summarizes classification performance, showing clear advantages of STEAM-EEG.

The visualization in Figures 4 and 5 is excellent, providing clear evidence of feature extraction capabilities.

Discussion and Limitations (Section 5):

The limitations are candidly addressed, but the discussion could further explore potential enhancements, such as transformer-based spatiotemporal analysis.

Declarations

Potential competing interests: No potential competing interests to declare.