Review of: "Mastering Artifact Correction in Neuroimaging Analysis: A Retrospective Approach"

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Potential competing interests: No potential competing interests to declare.

Mastering Artifact Correction in Neuroimaging Analysis: A Retrospective Approach

The paper presents an approach to artifact correction in MRI imaging using DL, with a two-model framework that is well-suited to addressing the lack of motion-corrupted datasets. However, further improvements in terms of dataset transparency, comparative performance, and analysis could strengthen the impact and applicability of this work. Nonetheless, MOANA holds significant potential for advancing MRI artifact correction and could be highly beneficial in clinical contexts. Several issues are raised, and the paper should be MAJOR revised before a final decision.

1. *The title is not appropriate and is not impressive; please try to adjust and modify it.*
2. *For the Abstract, the authors did not follow the general guideline of writing the Abstract. Anyone reading this abstract will not understand well the idea of the article. Rewrite the abstract by declaring the challenges, methodology, novelty, results, and contribution.*
3. *The Abstract should include some numerical results other than the statistical one you stated.*
4. *Any abbreviation should be defined before its use, not the reverse. FLAIR is not defined at its initial mention, nor is MOANA….*
5. *The Introduction is not sufficient; please list the main contributions at the end of the Introduction section.*
6. *The arrangement of the article is confusing, with too many subsections. The reader will be confused by this number of subsections; for example, you can merge some headers, or you can remove some headers that are not needed.*
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9. *In subtitle 4.1, you claim "Experimental Setup." Please may you specify the experimental facilities you had to get the images, not to analyze the images in the form of Nodes?*
10. *It appears that you take the run data directly from the environment such as (HH:MM:SS); may you explain what this means?*
11. *Why did you insert the training time in tables 2, 3,…? What will happen if you change the running hardware? Will this time be changed? So it is not appropriate from my view at all. To insert this time, it should be unique for the algorithm itself and not depend on the machine.*

12. *The caption of Table 1 is not appropriate and should be revised well.*
13. *You compared what you actually prepared, but you did not compare with the literature. Please validate your work with others; you can use the next work (Comparison between X-Ray Radiography Image Fusion Algorithms Used in Medical Applications, ICIT 2015 The 7th International Conference on Information Technology, 171-176).*
14. *The hierarchy of the Conclusion is not suitable: Objective, methodology, contribution, and future work.*
15. *You mentioned the optimizer "Adam optimizer," but you did not give any information about the network itself or classifiers.*
16. *The list of references is not appropriate; you used many website references that are not suitable for publication (use only for dataset copyrights). Instead, you can use the next updated references for deep learning: [*Applied Soft Computing 138, 110174, 2023] and [Journal of Instrumentation 18 (03), P03036, 2023].

The article is majorly revised. Please answer these comments before a final decision.