Review of: "An Improved Hybrid Transfer Learning-Based Deep Learning Model for Alzheimer's Disease Detection Using CT and MRI Scans"

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Potential competing interests: No potential competing interests to declare.

The main weakness of the paper lies in its lack of clarity, originality, and novelty. The following suggestions may be considered to enhance the quality and clarity of the manuscript.

1. Please update the paper title. The current form does not look like a scientific paper title.
2. The abstract needs a clearer articulation of the paper's main contributions. Additionally, the motivation behind this work should be more prominently outlined. It's crucial to delineate the unique challenges this work addresses, especially in contrast to preceding methods.
3. Frankly, using machine learning approaches for medical image recognition and segmentation is not quite new; e.g., multiple other approaches have been used for comparison by the authors in the case study part. Then, what is revolutionarily new about this study that uses an improved CNN for image segmentation?
4. The motivation is not clear. Why did this work? Is there any problem it addresses that the previous methods cannot?
5. Please remove the outdated references and add some more state-of-the-art deep learning-based papers.

- https://www.sciencedirect.com/science/article/abs/pii/S0010482523010351
- https://www.nature.com/articles/s41598-023-36311-0
- https://www.nature.com/articles/s41598-022-27266-9
- https://www.sciencedirect.com/science/article/pii/S0957417422024940
- https://www.sciencedirect.com/science/article/pii/S0020025522007332
- 6. The author fails to highlight the innovation, and the proposed model seems to be just a patchwork of several existing modules. Therefore, the novelty of the algorithm needs to be incorporated.
- 7. Add a subsection on the framework in Section 3 so that the proposed approach can be better understood, especially in comparison with previous image segmentation studies that employ machine learning approaches such as CNN.
- 8. For the proposed method, the underlying reasons for each step should be explained. Why was it like this in the paper?
- 9. The originality of the method is not clear. Just simply applying the DL method is not called novelty. What are the added values of the proposed method compared to the others for the given task? More explanation is needed.
- 10. Please compare your results with state-of-the-art works.
- 11. In experiments, the experimental analysis seems insufficient, which cannot verify the motivation and contributions

of this work.

- 12. Provide more information on the computational requirements and efficiency of the proposed approach, including comparisons with other methods in terms of speed and memory usage.
- 13. Discuss potential applications and use cases for the proposed approach, as well as any limitations or challenges that may arise in these scenarios.
- 14. Multi figures and information appear ambiguous and not clear.
- 15. Provide more information on the computational requirements and efficiency of the proposed approach, including comparisons with other methods in terms of speed and memory usage.
- 16. In addition to these specific recommendations, the authors should also run the manuscript through a grammar checker like Grammarly to address any language or grammatical errors. Finally, the authors should ensure that all references cited in the manuscript are up-to-date and relevant to the research topic.