

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.

There are still some possibilities to improve the manuscript :

Some references are do not appear to contain the specific statistics (references 2 and 3) For accuracy and verifiability, it would be better to reference the original data source (in this example the World Health Organization website).

I found the section outlining the paper's contributions to be somewhat ambiguous, which might lead to confusion for readers attempting to understand the core advancements the work offers. Furthermore, there are acronyms within the text that have not been defined upon their first use. In the Literature Review, there is a same problem with the acronyms.

To enrich the analysis, it would be beneficial to not only compare the accuracy of the state-of-the-art methods (table 1) but also to explain the specifics of each approach. A detailed examination of the methodology, which contributes to improved accuracy, would offer a more comprehensive understanding, and could potentially highlight innovative aspects of the work.

The manuscript identifies transfer learning as a key contribution; however, the discussion could be enhanced by addressing the specific disadvantages of applying transfer learning in the medical field, particularly when the pre-trained dataset is nonmedical and the model is subsequently fine-tuned on medical data. This detail would be valuable for readers to understand the implications and potential limitations of the methodology in a medical context.

The manuscript contains certain phrases, such as "they have recommended on-time and propagation of learning techniques compared to previous approaches," which currently lack clarity and are not well-defined within the field of machine learning. Providing precise definitions and established context for these terms is needed.

The discussion of the results appears to be incomplete, lacking a thorough comparative analysis of diagnostic accuracy across different stages of Alzheimer's disease. Additionally, several tables within the manuscript present data without accompanying explanatory text or conclusions. A more detailed examination and interpretation of these results would be

beneficial for readers to fully understand the implications of the research.

The future scope of the manuscript suggests applying the same model to diagnose other disorders, without indicating how the model design is specifically tailored to these new applications. This raises concerns about the model adaptability and the relevance of using transfer learning for Alzheimer's diagnosis as a significant contribution of the paper. Clarifying the connection between the model design and its potential cross-disorder applications would strengthen the argument for its versatility and the novelty of the approach.