Review of: "A Simple Preprocessing Method Enhances Machine Learning Application to EEG Data for Differential Diagnosis of Autism"

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Potential competing interests: No potential competing interests to declare.

Review Comments:

1. **Clarity and Organization:**

- The abstract provides a concise overview of the research, including the methodology and results. It effectively sets the stage for the reader.
- The Abstract must be merged into one paragraph.
- Also, other parts like Discussion must be merged into paragraphs, not shown as single sentences every now and then.

2. **Formatting and Consistency:**

- Ensure consistent formatting throughout the paper, including the citation style, font, and spacing. Make sure that the paper adheres to the guidelines or requirements of the intended publication venue.

3. **Methodology:**

- The application of the MST algorithm is explained in a clear and logical manner. However, it might be beneficial to include a brief rationale for choosing the MST algorithm over other clustering methods.

4. **Results and Discussion:**

- The presentation of results should be clear and straightforward, with tables and figures aiding comprehension. I would suggest a comparison of the results with results from other methods included in a benchmark paper.
- The discussion section provides a valuable comparison with other studies in the field, highlighting the significance of the current research in terms of sample size and focus on differential diagnosis.

5. **Language and Style:**

- The language is generally clear and concise, but some sentences are lengthy and could be broken down for improved readability.
- It might be helpful to define acronyms (e.g., EEG) upon first use to enhance clarity for readers not familiar with the terms.

6. **Future Directions and Limitations:**

- The paper briefly touches upon the need for further studies with larger cohorts and multicentric approaches. It would be beneficial to expand on the limitations of the current study and suggest potential directions for future research.

7. **Visual Aids:**

- The paper effectively uses visual aids, such as figures and tables, to illustrate concepts and present results. Ensure that figure captions are detailed enough to help readers understand the significance of each visual element without referring back to the main text.

8. **Explanation of the Approach:**

- While the paper introduces a novel pre-processing approach using MST, a brief explanation of why this method was chosen over others, and its advantages in the context of EEG data, would enhance the clarity of the paper.

9. **Statistical Significance:**

- When presenting results, consider including information on statistical significance. This could include p-values or confidence intervals to strengthen the validity of the findings.

10. **Accessibility of Machine Learning Concepts:**

- Given the diverse readership, briefly explain machine learning concepts, especially for readers who might not be familiar with terms like KNN (k-nearest neighbors) algorithm. This could be addressed in a dedicated section or in footnotes.
- Also for ANN could be addressed in a dedicated section or in footnotes.

11. **Recommendation (Statistical Significance:**)

- When presenting results, consider including information on statistical significance.

12. **Recommendation (Practical Implications:)**

- Consider expanding the discussion on the practical implications of the findings. How might the developed model be applied in real-world clinical settings, and what impact could it have on the diagnosis and treatment of neuropsychiatric disorders?

13. **Grammar and Syntax:**

- Perform a final review for grammatical errors, sentence structure, and syntax. Ensuring a high level of linguistic accuracy enhances the professionalism of the paper.