

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

Daniela Santos¹

¹ Universidade do Porto

Potential competing interests: No potential competing interests to declare.

Abstract:

- It cannot have abbreviations without explanation (e.g., EEG, ASCII, ASD).
- What is the new pre-processing approach? Why not write the name instead of writing this?
- What is the problem?

Introduction:

- The same problem with the abbreviations. The introduction starts by using EEG, and only in the second paragraph is the description of the abbreviation written.
- The information related to MST is repeated throughout this section.
- The last paragraph of the introduction is the study's objective, not the methodology.

Patients and methods:

- This section is part of the Methods.

Methods:

- Which center? By whom? On what day and at what hour?
- How was MST derived from the EEG Manhattan distance matrix?
- Why does it only show nine patients in Figure 2?
- Can Figure 4 be a table inserted in the document?
- What do the authors mean by "are joined in a single row" when writing about Figure 4?
- Is ANN an artificial neural network?

Results:

- "KNN algorithm reached the best predictive" from what models? Where are the models utilized described?
- Where is the population information? Table 1 normally describes the patients.

Discussion:

- This first paragraph is missing scientific references.
- How did the authors reach Table 2? Was a systematic review performed? Where are the details?
- OK, you use MST, but is this normal, or is another technique preferable or more used for this type of analysis?
- Can the authors better justify the affirmation that “these diagnostic techniques will take place only for subjects seeking medical care for some symptoms, rather than for simple screening”?
- The sentence “The next step is to validate these results” contradicts “further studies are probably required.”

Overall, the manuscript needs revision for repeated concepts, lacks explanations of abbreviations, and needs a clearer description of the problem and its solution. Also, I am missing a lot of details that engage the reader and enhance the article's appeal. Finally, I expected that the authors would compare these results to their first approach (S-ROM/I.FAST), but they did not.