

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

Lorenzo Fontanelli¹

¹ Sant'Anna School of Advanced Studies

Potential competing interests: No potential competing interests to declare.

Authors provide an interesting technique on how to preprocess EEG data for the differential diagnosis of Autism. In detail, they used a minimum spanning tree on the electrodes' distance matrix measured as the Manhattan distance (MD). Overall, this is a fascinating and relevant topic that can help the development of diagnostic tools based on artificial intelligence.

I have some comments that could be classified as major revisions, either on the methods section or on patient selection:

(A) **Authors did not describe how MD was calculated from the EEG signal timeseries.** Providing the math behind this step is crucial in order to fully understand the paper and to ensure replicability.

(B) Regarding the minimum spanning tree (MST), it is known that there may be more than one MST for a given graph. How **specific MST, over potentially many, was chosen to be further considered by the classifier?**

(C) **Which diagnostic criteria were used to make the diagnosis of Autism?** Regarding the selection of patients, in order to guarantee reproducibility, a better characterization of patients is required, especially regarding **severity of disease** (e.g., Diagnostic and Statistical Manual of Mental Disorders V definition) and **presence/absence of intellectual impairment**.

As minor revisions, Authors should revise grammar and the use of English, as well as provide informative captions for tables and figures.