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

Nitsa Herzog[1]

1 Northumbria University

Potential competing interests: No potential competing interests to declare.

It is an interesting case study and a good attempt to separate children with Autistic disorders and other neurological pathologies using the MST approach and ML classifier.

However, the machine learning modelling description has multiple issues and requires reconsideration and text corrections.

Several points need to be taken into account when the text will be corrected:

1. The division of 50% for training and 50% for testing is not ideal for the small data set (100 subjects). Using 80% - 85% for the training and 20% - 15% for the testing is recommended.
2. What kind of validation was used in the training process is unclear.
3. It was mentioned in the text that researchers used ANN (artificial neural network) for the training-testing stage, but Table 1 shows the results obtained with the KNN (k-nearest neighbour) algorithm. This is a significant inconsistency.
4. The ANN algorithm for the small dataset is not recommended (if it was applied). This point remains unclear.
5. The choice of the KNN algorithm was not justified. Moreover, the unsupervised learning approach is not ideal in this case study - the authors already hold patients' labelled data.

I hope the authors will find the comments constructive. Best wishes with their study.