Reviewer Report

Title: Transfer learning improves resting-state functional connectivity pattern analysis using convolutional neural networks

Version: Revision 1 Date: 6/24/2018

Reviewer name: Heung-Il Suk

Reviewer Comments to Author:

First of all, this reviewer appreciate the authors kind responses. However, there are still some critical concerns that make this reviewer negative for acceptance of the manuscript.

For some of the reviewer’s comments, the authors’ response is not acceptable or appropriate such as
- Validation with other public datasets: it was recommended to conduct a testing on public datasets, rather than using them training only, performance improvements only on the in-house dataset is not a good way for justification of the proposed method
- statistical significance is not acceptable yet

Other concerns:
- There is no reason why the authors considered young and elder groups only for classification and regression. The middle-age group covers a large portion in the dataset. What was the criterion for age-grouping?
- It is not clear how the authors selected their final models for different conditions. Did the authors pre-specify the number of epochs or use a separate validation set? It is definitely clear that the test set should be never used any one of the steps before testing.
- As raised by other reviewer, it is critical to applying different preprocessing steps for different datasets. Although the authors responded to the question, that is not acceptable to this reviewer.
- How did the authors compute the pairwise connectivity?

Methods

Are the methods appropriate to the aims of the study, are they well described, and are necessary controls included? Choose an item.

Conclusions

Are the conclusions adequately supported by the data shown? Choose an item.

Reporting Standards

Does the manuscript adhere to the journal’s guidelines on minimum standards of reporting? Choose an item.

Choose an item.

Statistics
Are you able to assess all statistics in the manuscript, including the appropriateness of statistical tests used? Choose an item.

Quality of Written English

Please indicate the quality of language in the manuscript: Needs some language corrections before being published

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