Review of: "Deep Learning Modeling for Prediction of Cognitive Task Related Features from Resting-state fMRI Data"

Na Zhao[1]

1 Hangzhou Normal University

The authors proposed a new model, i.e., cGCN-LSTM, and validate its prediction ability on Koh's test scores, which retains sufficient explanatory power even only based on rs-FC. Furthermore, the authors also used occlusion method to identify brain regions or their connectivity that have a large impact on prediction abilities. This is beneficial for the design of task fMRI experiments. Here, I have some questions.

1. The sentence "It was acknowledged that the Kohs block-design test scores were negatively correlated with age, but the results suggested the possibility of age-related cognitive decline that could not be captured by age prediction models alone." In the abstract mentioned the importance of "age", however, there is no introduce of it in previous text. It would be better for clarifying that age was one important input for the modified prediction model.

2. Throughout the first paragraph of the introduction part, is should be more specified and give some references. For example, references should be given after the three sentences of "This is especially true when predicting complex offline executive control performance from resting-state data alone, …. thus emphasizing its practical versatility".

3. What's the authors hope to get from this modified model? Hypotheses should be Specifying.

4. It would be better to put the last sentence of the first paragraph (section of 3.1) in the figure legend of Figure 2.

5. It would be better to put the last three sentence of the second paragraph (section of 3.1) in "Discussion" section.