Review of: "Prediction and Analysis of Structural Brain Health Indicators Using Deep Learning Models with Functional Brain Images as Input"

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1.No Clarity "In this study, the environment was built using PyTorch and Pytorch Geometrics on a Docker with two GTX1080ti GPUs (11 GB VRAM) to implement the

deep learning models based on the GitHub repository published by Li et al. (2021)

(https://github.com/xxlya/BrainGNN_Pytorch). We implemented the sparse modeling

code to evaluate the contribution of each node to the regression using scikit-learn (https://scikit-learn.org/stable/) and

group Lasso (https://github.com/yngvem/group-lasso/blob/master/docs/index.rst). All the codes used in this research are

available to the public through the following URL: https://github.com/Skk5mj/masterthesis/"

2.No Clarity for equation number FC-BHQ = 100 + 15 × (^ − mean(GM-BHQ))/std(GM-BHQ)

3.No Clarity for equation mathematical concept

4.No Clarity image "Figure 1. Overview of analyses. The rs-fMRI time series and GM images for each subject obtained from the NKI-RS dataset were preprocessed, GM-BHQ was computed from the GM

images, and the functional brain graph was constructed from the rs-fMRI time series. BrainGNN used as the regression

model in this study learns the mapping : ⟼ from the functional brain graph to GM-BHQ and outputs predicted

value^. The output^ of BrainGNN is referred to as FC-BHQ, the BHQ predicted from functional data"

5.No Clarity image "Figure 2. Relationship between GM-BHQ and age. The vertical and horizontal axes correspond to GM-BHQ and age, respectively. (Left) Regression lines (orange) were obtained

by the least squares method. (Right) Results of curve fitting between GM-BHQ and age. The order of the polynomial

regression curve (orange) was set to six based on the AIC"

6.No Clarity values Table 1: Prediction accuracy of each model by 5-fold CV

7.No Clarity image "Figure 3. Prediction results for Model 1 with K = 7 clusters. The vertical axis corresponds to

the predicted value of BrainGNN (FC-BHQ), and the horizontal axis corresponds to GM-BHQ. The regression lines shown

in red were obtained by the least squares method. All p-values calculated by correlation analysis are uncorrected"

8.No Clarity image resolution Figure 4,5,6,7.

9.No Clarity values Table 2 The twenty areas recording the highest absolute partial regression coefficients under each of

the α values

10 No content clarity content 4. Discussion 4.1. Interpretation of the Model