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

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The paper from Tokuhiro et al is based on the modification, from classification to regression, of a connectivity-based graph convolutional network (cGCN) proposed by Wang (https://direct.mit.edu/netn/article/5/1/83/97525/Graph-convolutional-network-for-fMRI-analysis) introducing a LSTM layer for the manipulation of an time series pattern, the 140 time points, in the fMRI data. The new architecture, cGCN–LSTM, is validated using 615 subjects in a range of age from 30-89 years, with the goal of predict/infer the value of the scale Kohs block-design test. A basic LASSO model was used as baseline and two approaches of occlusion were used to know how the cGCN–LSTM was capturing relevant anatomical and physiological information.

The results are consistents and the paper is well written, my only concern is related to the impact of age in cerebral volume in participants and how this factor might not be captured in the methodology. Although the paper form Wang don't discuss the range of age in the second experiment, for the firsrt experiment they "used the "100 unrelated subjects" dataset (54 females, age: 22–36)", a narrow range of age, and the model is based in functional data, in the range of age of the current paper (30-89) the loss of volume might be discussed as a factor for future work.