Reactions to the paper

Contribution:

- Propose a novel readout function OCRead.
- Standardize a fair evaluation pipeline for meaningful model comparison on the ABIDE dataset.

Strength:

- Every design is well-motivated by careful task-specific observations.
- The experiments are thorough with numerous baselines and ablation studies.
- Theoretical justification is provided for orthonormal initialization (but not the entire OCRead design).

Weakness: See next slide.

Challenges

1. Many designs of this paper are based on empirical observations. e.g. Authors propose OCRead due to the observation that nodes in the same functional modules tend to have similar behaviors and clustered representations. However, the author does not reason why this specific design could beat existing methods. I wonder **is it possible to replace this ad hoc design by a more general solution**. For example, Graphormer uses a special node (called virtual node, similar to [CLS] token in NLP) to learn a graph-level representation to get rid of the design of readout function. **If not, why general graph learning solution cannot adapt well on this task?**

2. The paper contains two experiments but are not that interesting: One is predicting gender and the other is predicting Autism spectrum disorder (ASD). While predicting disease is meaningful, the dataset is highly balanced (51.14% positive rate). Since this is an application paper, it would be more interesting to see **the prediction performance on an imbalanced dataset that is more close to the real-world scenario**.