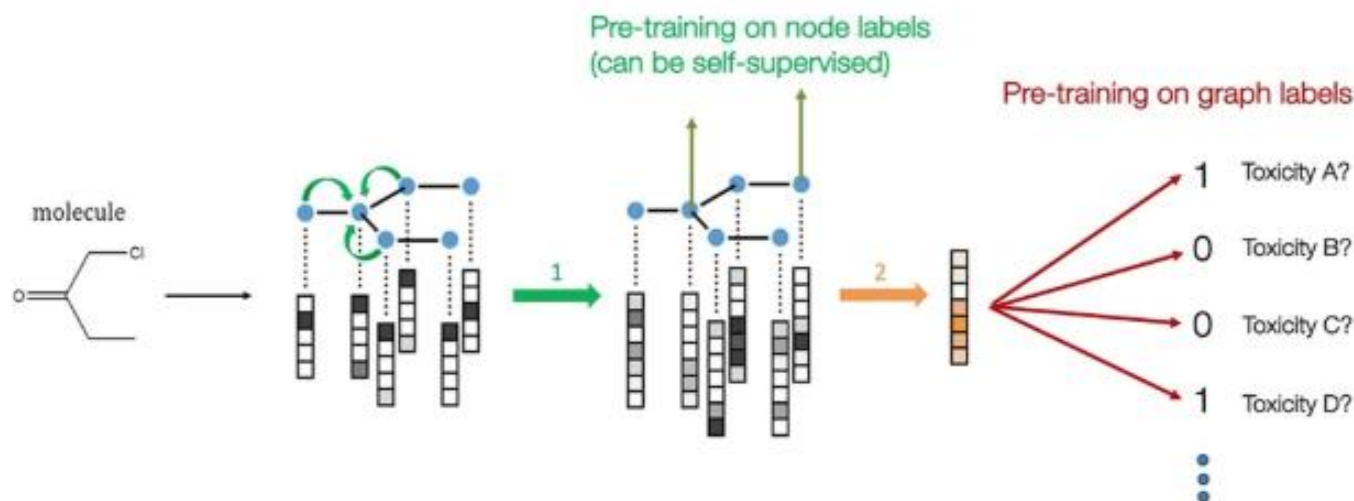


Strategies for Pre-training Graph Neural Networks

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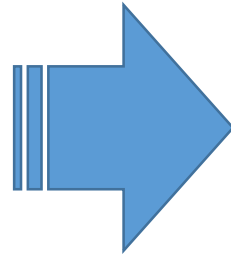


Hu, Weihua, et al. "Strategies for Pre-training Graph Neural Networks." *International Conference on Learning Representations*. 2020.

Pre-training GNN ?

problem

- Scarcity of labeled data
- Out-of-distribution prediction



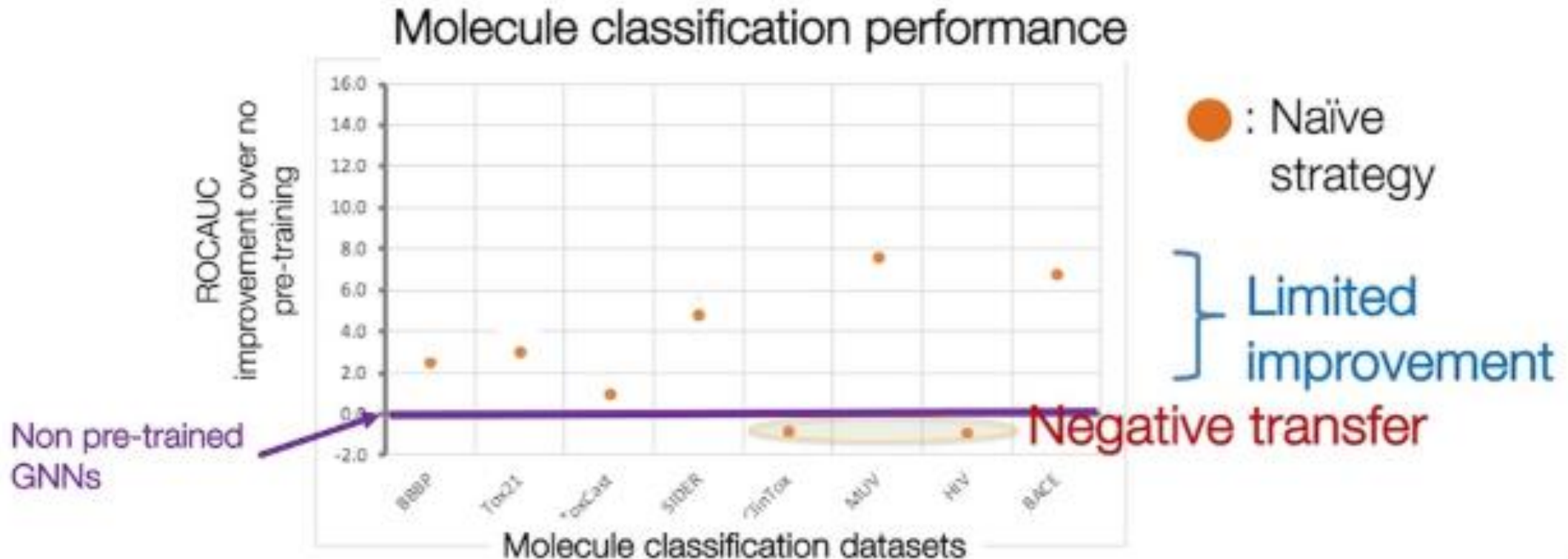
solution

Pre-training a model on related tasks where data is abundant

- How to pre-train GNNs ?

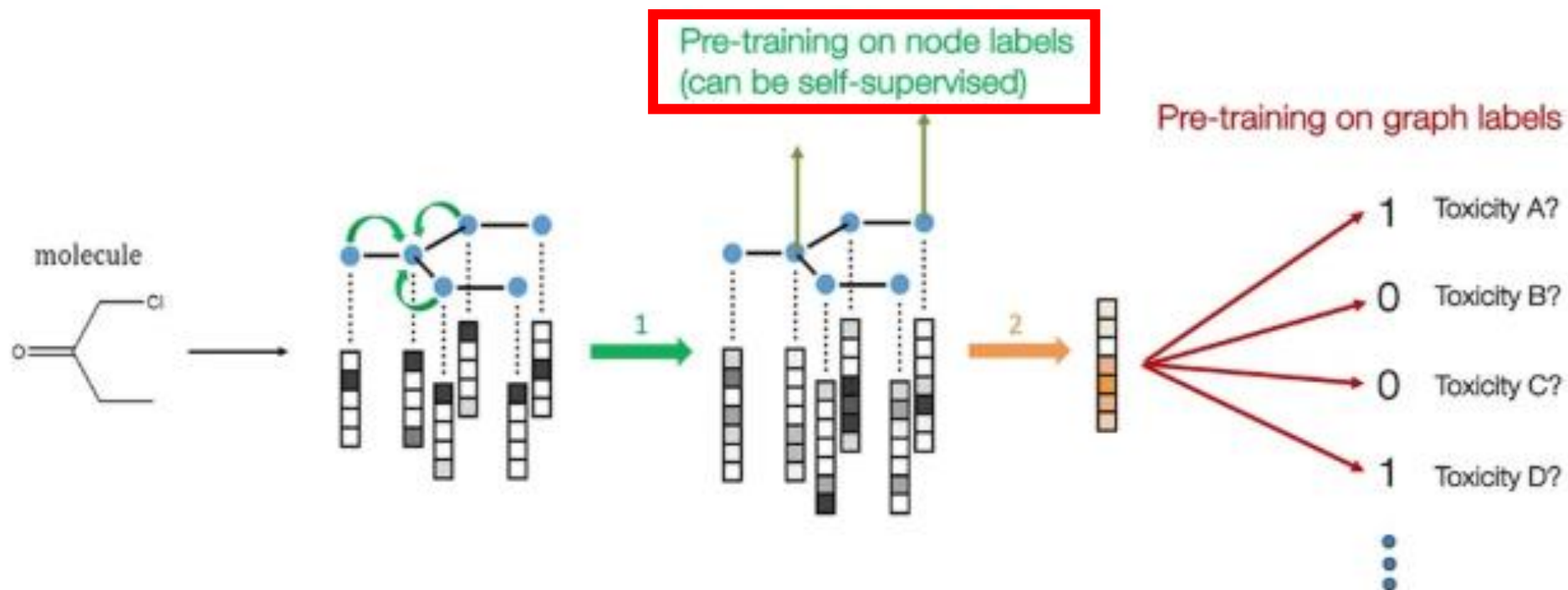
Naïve strategy

- Supervised pre-training on relevant labels
 - Unrelated tasks can even hurt the downstream performance (negative transfer)



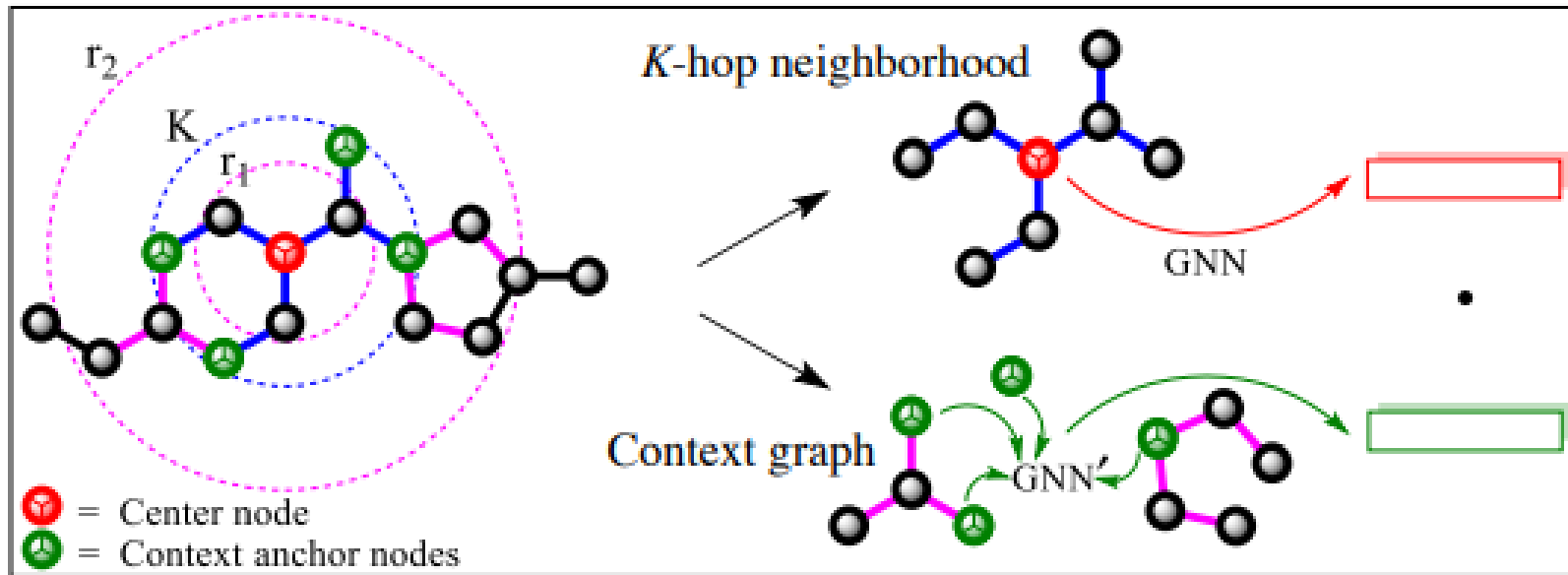
Proposed strategies for pre-training GNN

- Pre-train both node and graph embeddings



Pre-training on node-level : Context Prediction

- Matching the node representation with the surrounding context graph embedding of the node.
- Negative Sampling : Learning with binary classification problem to predict whether they correspond to the same node



Results

- Improve the performance
 - Avoids negative transfer

