



NeurIPS 2020 Paper

Parameterized Explainer for Graph Neural Network

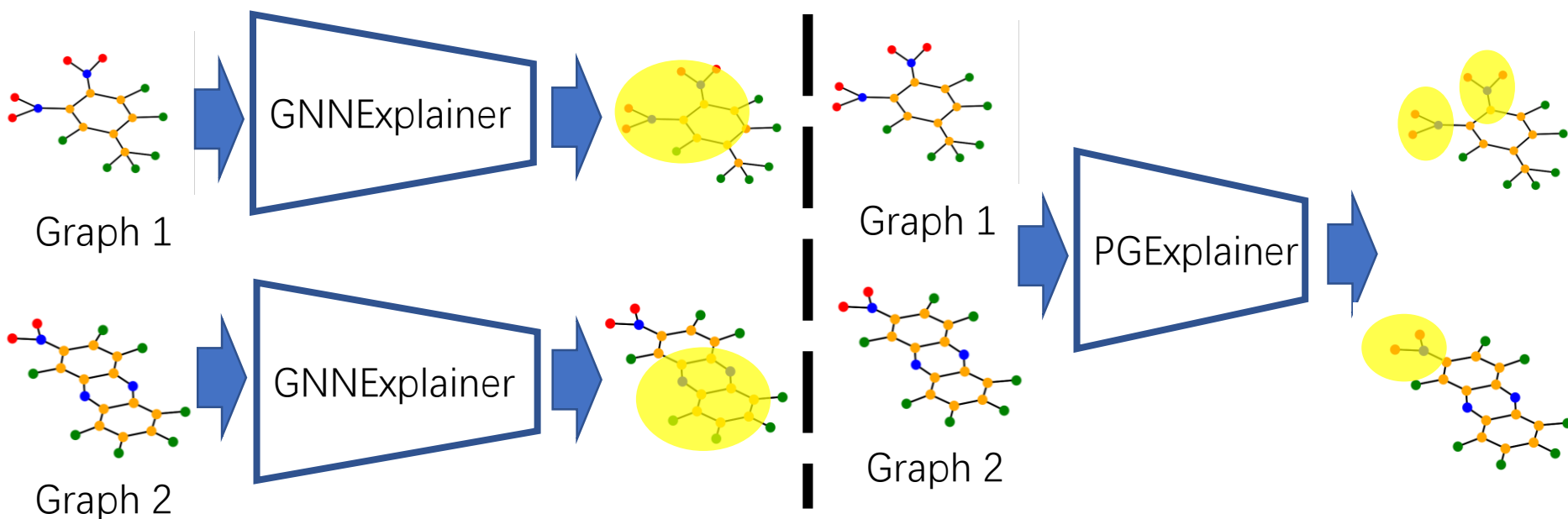
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1. The Pennsylvania State University, 2. NEC Labs America

Dec. 2020 | Virtual Conference

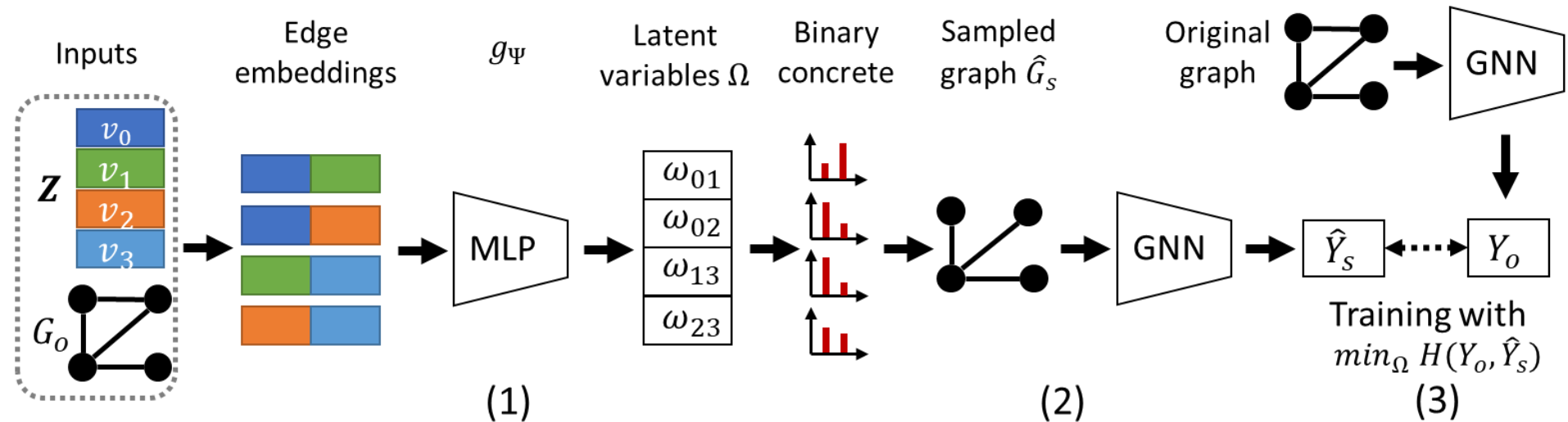
Graph Neural Network

- Combine node information with structural information.
- Hard to interpret.

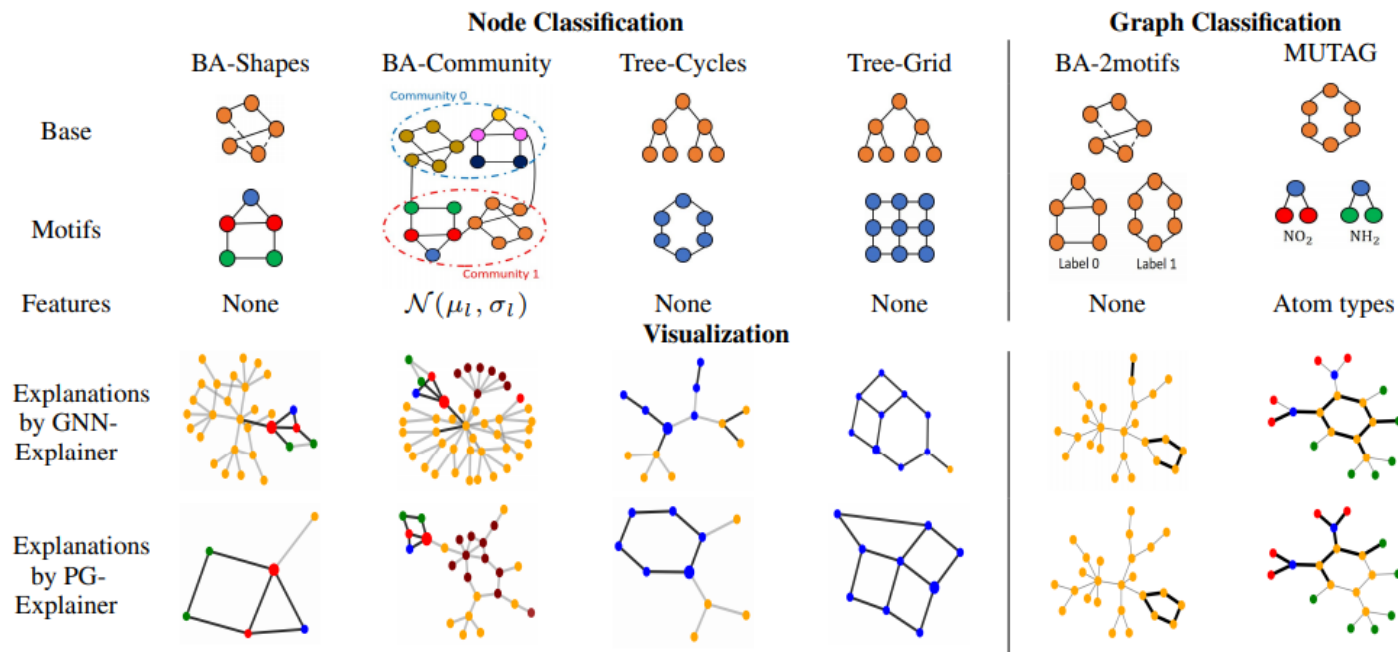


	Local Fidelity	Model Agnostic:	Task Agnostic:	Collectively	Global View	Inductive
GNNExplainer	√	√	√	X	X	X
PGExplainer	√	√	√	√	√	√

PGExplainer Framework



Experimental Results



Explanation AUC

GRAD	0.882	0.750	0.905	0.612	0.717	0.783
ATT	0.815	0.739	0.824	0.667	0.674	0.765
Gradient	-	-	-	-	0.773	0.653
GNNExplainer	0.925	0.836	0.948	0.875	0.742	0.727
PGExplainer	0.963±0.011	0.945±0.019	0.987±0.007	0.907±0.014	0.926±0.021	0.873±0.013
Improve	4.1%	13.0%	4.1%	3.7%	24.7%	11.5%

Inference Time (ms)

GNNExplainer	650.60	696.61	690.13	713.40	934.72	409.98
PGExplainer	10.92	24.07	6.36	6.72	80.13	9.68
Speed-up	59x	29x	108x	106x	12x	42x

Thank you

Parameterized Explainer for Graph Neural Network

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