The wrong table: The red box is the result from the previous version. When we response, we edited the table based on the previous version by mistake. The tuning parameters and method are slightly different from the current version.

Table 4: Performance comparison of the proposed models

GNN Model On Chicago Data	GraphConv		SAGEConv		GCNConv		GATConv	
Score Method-CP	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.7984^{\pm0.1181}$	$3.6659^{\pm0.3313}$	$0.8297^{\pm0.1264}$	$3.6350^{\pm0.2231}$	$0.8234^{\pm0.1213}$	$3.6918^{\pm0.2454}$	$0.9524^{\pm0.0333}$	$3.3493^{\pm0.5910}$
DiGAE	$0.8081^{\pm0.1257}$	$3.5721^{\pm0.1951}$	$0.8196^{\pm0.1215}$	$3.5978^{\pm0.1884}$	$0.8135^{\pm0.1361}$	$3.5846^{\pm0.2050}$	$0.8135^{\pm0.1319}$	$3.6346^{\pm0.2432}$
LGNN	$0.9174^{\pm0.0238}$	$6.7157^{\pm0.1325}$	$0.9152^{\pm0.0256}$	$6.5865^{\pm0.1577}$	$0.9151^{\pm0.0246}$	$6.5265^{\pm0.1426}$	$0.9075^{\pm0.0618}$	$6.0679^{\pm0.1862}$
Average	0.8477	4.6512	0.8548	4.5998	0.8507	4.6010	0.8912	4.3506
Score Method-CQR	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9514^{\pm0.0144}$	$3.3652^{\pm0.1312}$	$0.9517^{\pm0.0141}$	$3.5878^{\pm0.2107}$	$0.9578^{\pm0.0420}$	$4.0504^{\pm1.2916}$	$0.9524^{\pm0.0333}$	$3.3292^{\pm0.5866}$
DiGAE	$0.9205^{\pm0.0498}$	$3.3135^{\pm0.1172}$	$0.9223^{\pm0.0469}$	$3.3872^{\pm0.1260}$	$0.9250^{\pm0.0479}$	$3.4241^{\pm0.1271}$	$0.9089^{\pm0.0611}$	$3.6158^{\pm0.2348}$
LGNN	$0.9284^{\pm0.0296}$	$3.4362^{\pm0.1029}$	$0.9305^{\pm0.0258}$	$3.4844^{\pm0.1233}$	$0.9290^{\pm0.0284}$	$3.6514^{\pm0.1050}$	$0.9379^{\pm0.0261}$	$4.0805^{\pm0.5445}$
Average	0.9334	3.3716	0.9348	3.4865	0.9373	3.7086	0.9331	3.6752
Score Method-CQR-cluster	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9519^{\pm0.0318}$	$3.3721^{\pm0.021}$	$0.9532^{\pm0.028}$	$3.4862^{\pm0.035}$	$0.9557^{\pm0.024}$	$3.7083^{\pm0.041}$	$0.9541^{\pm0.032}$	$3.6749^{\pm0.019}$
DiGAE	$0.9412^{\pm0.025}$	$3.3645^{\pm0.018}$	$0.9428^{\pm0.031}$	$3.4821^{\pm0.027}$	$0.9443^{\pm0.029}$	$3.7058^{\pm0.033}$	$0.9437^{\pm0.026}$	$3.6724^{\pm0.022}$
LGNN	$0.9315^{\pm0.037}$	$3.3582^{\pm0.015}$	$0.9332^{\pm0.034}$	$3.4789^{\pm0.029}$	$0.9351^{\pm0.031}$	$3.7023^{\pm0.036}$	$0.9345^{\pm0.028}$	$3.6698^{\pm0.024}$
Average	0.9415	3.3649	0.9424	3.4824	0.9450	3.7055	0.9438	3.6720
Score Method-CQR-RR	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9482^{\pm0.019}$	$3.3018^{\pm0.017}$	$0.9497^{\pm0.021}$	$3.3976^{\pm0.023}$	$0.9513^{\pm0.016}$	$3.4241^{\pm0.025}$	$0.9508^{\pm0.018}$	$3.5372^{\pm0.020}$
DiGAE	$0.9395^{\pm0.026}$	$3.2954^{\pm0.019}$	$0.9411^{\pm0.028}$	$3.3921^{\pm0.024}$	$0.9428^{\pm0.022}$	$3.4207^{\pm0.027}$	$0.9432^{\pm0.025}$	$3.5346^{\pm0.021}$
LGNN	$0.9316^{\pm0.035}$	$3.2893^{\pm0.014}$	$0.9335^{\pm0.032}$	$3.3875^{\pm0.026}$	$0.9357^{\pm0.029}$	$3.4174^{\pm0.028}$	$0.9364^{\pm0.027}$	$3.5319^{\pm0.023}$
Average	0.9442	3.2945	0.9414	3.3920	0.9433	3.4207	0.9435	3.5346
Score Method-CQR-RR-Cluster	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9554^{\pm0.0152}$	$3.2751^{\pm0.1413}$	$0.9537^{\pm0.0189}$	$3.2435^{\pm0.1478}$	$0.9513^{\pm0.0123}$	$3.3126^{\pm0.1622}$	$0.9506^{\pm0.0145}$	$3.1268^{\pm0.1223}$
DiGAE	$0.9499^{\pm0.0415}$	$3.1342^{\pm0.1483}$	$0.9487^{\pm0.0302}$	$3.0435^{\pm0.1423}$	$0.9492^{\pm0.0424}$	$3.1557^{\pm0.1529}$	$0.9412^{\pm0.0724}$	$3.1923^{\pm0.2125}$
LGNN	$0.9425^{\pm0.0344}$	$3.4521^{\pm0.0635}$	$0.9454^{\pm0.0283}$	$3.1845^{\pm0.0456}$	$0.9482^{\pm0.0345}$	$3.0372^{\pm0.0713}$	$0.9493^{\pm0.0282}$	$3.5361^{\pm0.1158}$
Average	**0.9493**	**3.2871**	**0.9493**	**3.1552**	**0.9496**	**3.1685**	**0.9470**	**3.2851**

The corrected table 1:

Table 1: Performance comparison of the proposed models

GNN Model On Chicago Data	GraphConv		SAGEConv		GCNConv		GATConv	
Score Method-CP	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.7984^{\pm0.1181}$	$3.6659^{\pm0.3313}$	$0.8297^{\pm0.1264}$	$3.6350^{\pm0.2231}$	$0.8234^{\pm0.1213}$	$3.6918^{\pm0.2454}$	$0.9524^{\pm0.0333}$	$3.3493^{\pm0.5910}$
DiGAE	$0.8081^{\pm0.1257}$	$3.5721^{\pm0.1951}$	$0.8196^{\pm0.1215}$	$3.5978^{\pm0.1884}$	$0.8135^{\pm0.1361}$	$3.5846^{\pm0.2050}$	$0.8135^{\pm0.1319}$	$3.6346^{\pm0.2432}$
LGNN	$0.9174^{\pm0.0238}$	$6.7157^{\pm0.1325}$	$0.9152^{\pm0.0256}$	$6.5865^{\pm0.1577}$	$0.9151^{\pm0.0246}$	$6.5265^{\pm0.1426}$	$0.9075^{\pm0.0618}$	$6.0679^{\pm0.1862}$
Average	0.8477	4.6512	0.8548	4.5998	0.8507	4.6010	0.8912	4.3506
Score Method-CQR	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9514^{\pm0.0144}$	$3.3652^{\pm0.1312}$	$0.9517^{\pm0.0141}$	$3.5878^{\pm0.2107}$	$0.9578^{\pm0.0420}$	$4.0504^{\pm1.2916}$	$0.9524^{\pm0.0333}$	$3.3292^{\pm0.5866}$
DiGAE	$0.9205^{\pm0.0498}$	$3.3135^{\pm0.1172}$	$0.9223^{\pm0.0469}$	$3.3872^{\pm0.1260}$	$0.9250^{\pm0.0479}$	$3.4241^{\pm0.1271}$	$0.9089^{\pm0.0611}$	$3.6158^{\pm0.2348}$
LGNN	$0.9284^{\pm0.0296}$	$3.4362^{\pm0.1029}$	$0.9305^{\pm0.0258}$	$3.4844^{\pm0.1233}$	$0.9290^{\pm0.0284}$	$3.6514^{\pm0.1050}$	$0.9379^{\pm0.0261}$	$4.0805^{\pm0.5445}$
Average	0.9334	3.3716	0.9348	3.4865	0.9373	3.7086	0.9331	3.6752
Score Method-CQR-cluster	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9519^{\pm0.0318}$	$3.3721^{\pm0.021}$	$0.9532^{\pm0.028}$	$3.4862^{\pm0.035}$	$0.9557^{\pm0.024}$	$3.7083^{\pm0.041}$	$0.9541^{\pm0.032}$	$3.6749^{\pm0.019}$
DiGAE	$0.9412^{\pm0.025}$	$3.3645^{\pm0.018}$	$0.9428^{\pm0.031}$	$3.4821^{\pm0.027}$	$0.9443^{\pm0.029}$	$3.7058^{\pm0.033}$	$0.9437^{\pm0.026}$	$3.6724^{\pm0.022}$
LGNN	$0.9315^{\pm0.037}$	$3.3582^{\pm0.015}$	$0.9332^{\pm0.034}$	$3.4789^{\pm0.029}$	$0.9351^{\pm0.031}$	$3.7023^{\pm0.036}$	$0.9345^{\pm0.028}$	$3.6698^{\pm0.024}$
Average	0.9415	3.3649	0.9424	3.4824	0.9450	3.7055	0.9438	3.6720
Score Method-CQR-RR	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9482^{\pm0.019}$	$3.3018^{\pm0.017}$	$0.9497^{\pm0.021}$	$3.3976^{\pm0.023}$	$0.9513^{\pm0.016}$	$3.4241^{\pm0.025}$	$0.9508^{\pm0.018}$	$3.5372^{\pm0.020}$
DiGAE	$0.9395^{\pm0.026}$	$3.2954^{\pm0.019}$	$0.9411^{\pm0.028}$	$3.3921^{\pm0.024}$	$0.9428^{\pm0.022}$	$3.4207^{\pm0.027}$	$0.9432^{\pm0.025}$	$3.5346^{\pm0.021}$
LGNN	$0.9316^{\pm0.035}$	$3.2893^{\pm0.014}$	$0.9335^{\pm0.032}$	$3.3875^{\pm0.026}$	$0.9357^{\pm0.029}$	$3.4174^{\pm0.028}$	$0.9364^{\pm0.027}$	$3.5319^{\pm0.023}$
Average	0.9442	3.2945	0.9414	3.3920	0.9433	3.4207	0.9435	3.5346
Score Method-CQR-RR-Cluster	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
GAE	$0.9578^{\pm0.0134}$	$3.1297^{\pm0.1401}$	$0.9578^{\pm0.0189}$	$3.0985^{\pm0.1478}$	$0.9527^{\pm0.0123}$	$3.1614^{\pm0.1622}$	$0.9520^{\pm0.0145}$	**$2.8927^{\pm0.1223}$**
DiGAE	$0.9513^{\pm0.0415}$	**$3.0262^{\pm0.1412}$**	$0.9501^{\pm0.0312}$	**$2.8976^{\pm0.1393}$**	$0.9507^{\pm0.0456}$	$2.9347^{\pm0.1139}$	$0.9442^{\pm0.0735}$	$3.0321^{\pm0.2134}$
LGNN	$0.9438^{\pm0.0396}$	$3.3562^{\pm0.0355}$	$0.9473^{\pm0.0423}$	$3.1422^{\pm0.0423}$	$0.9497^{\pm0.0323}$	**$2.9913^{\pm0.0732}$**	$0.9507^{\pm0.0324}$	$3.5195^{\pm0.1231}$
Average	**0.9510**	**3.1707**	**0.9517**	**3.0461**	**0.9510**	**3.0291**	**0.9490**	**3.1481**

The wrong table: The red box is the result of our method from the previous version, and we corrected these results.

Table 5: Results of RR-GNN on Node Regression Datasets

Dataset	GraphSAGE		SGC		GCN		GATS	
Metrics	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
Anaheim: CF-GNN	0.9520$^{\pm 0.0669}$	**1.9231**$^{\pm 0.0483}$	0.9559$^{\pm 0.0617}$	2.2031$^{\pm 0.0241}$	0.9519$^{\pm 0.0531}$	2.3782$^{\pm 0.0533}$	0.9523$^{\pm 0.0302}$	2.1499$^{\pm 0.0463}$
Anaheim: Cluster-GNN	0.9532$^{\pm 0.042}$	1.8954$^{\pm 0.037}$	0.9561$^{\pm 0.035}$	2.1423$^{\pm 0.031}$	0.9528$^{\pm 0.041}$	2.2451$^{\pm 0.029}$	0.9541$^{\pm 0.028}$	2.0321$^{\pm 0.025}$
Anaheim: RR-GAE	0.9539$^{\pm 0.038}$	1.8732$^{\pm 0.032}$	**0.9567**$^{\pm 0.031}$	2.0987$^{\pm 0.028}$	0.9532$^{\pm 0.036}$	2.1934$^{\pm 0.026}$	0.9563$^{\pm 0.024}$	1.9623$^{\pm 0.022}$
Anaheim: Clsuter-RR-GAE	**0.9543**$^{\pm 0.0320}$	1.9647$^{\pm 0.0197}$	0.9563$^{\pm 0.0562}$	**2.0338**$^{\pm 0.0224}$	**0.9535**$^{\pm 0.0407}$	**2.2328**$^{\pm 0.0304}$	**0.9590**$^{\pm 0.0332}$	**1.9136**$^{\pm 0.0256}$
Chicago: CF-GNN	0.9448$^{\pm 0.0519}$	2.3426$^{\pm 0.0384}$	0.9486$^{\pm 0.0247}$	1.0423$^{\pm 0.0372}$	0.9505$^{\pm 0.0447}$	2.0456$^{\pm 0.0443}$	0.9508$^{\pm 0.0569}$	1.1396$^{\pm 0.0686}$
Chicago: Cluster-GNN	0.9461$^{\pm 0.039}$	2.2894$^{\pm 0.034}$	0.9492$^{\pm 0.031}$	1.1895$^{\pm 0.029}$	0.9513$^{\pm 0.037}$	1.8742$^{\pm 0.031}$	0.9516$^{\pm 0.042}$	1.1254$^{\pm 0.045}$
Chicago: RR-GAE	0.9472$^{\pm 0.035}$	2.2673$^{\pm 0.029}$	**0.9498**$^{\pm 0.028}$	1.2567$^{\pm 0.026}$	0.9519$^{\pm 0.033}$	1.6923$^{\pm 0.027}$	0.9519$^{\pm 0.038}$	1.1489$^{\pm 0.039}$
Chicago: Cluster-RR-GAE	**0.9476**$^{\pm 0.0426}$	**2.2581**$^{\pm 0.0392}$	0.9496$^{\pm 0.0382}$	**1.2342**$^{\pm 0.0231}$	**0.9522**$^{\pm 0.0373}$	**1.5899**$^{\pm 0.0268}$	**0.9520**$^{\pm 0.0371}$	1.1423$^{\pm 0.0292}$
Education: CF-GNN	0.9501$^{\pm 0.0242}$	2.3808$^{\pm 0.0427}$	0.9500$^{\pm 0.0285}$	2.4892$^{\pm 0.0351}$	0.9483$^{\pm 0.0408}$	2.4380$^{\pm 0.0452}$	0.9502$^{\pm 0.0392}$	2.4209$^{\pm 0.0376}$
Education: Cluster-GNN	0.9513$^{\pm 0.031}$	2.3145$^{\pm 0.038}$	0.9517$^{\pm 0.033}$	2.3721$^{\pm 0.032}$	0.9496$^{\pm 0.035}$	2.2894$^{\pm 0.034}$	0.9518$^{\pm 0.036}$	2.3256$^{\pm 0.033}$
Education: RR-GAE	0.9529$^{\pm 0.029}$	2.1932$^{\pm 0.027}$	0.9534$^{\pm 0.030}$	2.1478$^{\pm 0.028}$	0.9508$^{\pm 0.032}$	2.0321$^{\pm 0.029}$	0.9532$^{\pm 0.031}$	2.1423$^{\pm 0.030}$
Education: Cluster-RR-GAE	**0.9588**$^{\pm 0.0426}$	**2.0715**$^{\pm 0.0289}$	**0.9567**$^{\pm 0.0372}$	**2.0607**$^{\pm 0.0239}$	**0.9566**$^{\pm 0.0373}$	**1.8871**$^{\pm 0.0260}$	**0.9583**$^{\pm 0.0386}$	**1.9080**$^{\pm 0.0221}$
Election: CF-GNN	0.9498$^{\pm 0.0211}$	0.9268$^{\pm 0.0429}$	0.9495$^{\pm 0.0215}$	0.9279$^{\pm 0.0302}$	0.9506$^{\pm 0.0473}$	0.9009$^{\pm 0.0282}$	0.9488$^{\pm 0.0363}$	0.9136$^{\pm 0.0681}$
Election: Cluster-GNN	0.9503$^{\pm 0.028}$	0.9152$^{\pm 0.038}$	0.9501$^{\pm 0.027}$	0.9124$^{\pm 0.035}$	0.9512$^{\pm 0.041}$	0.8723$^{\pm 0.031}$	0.9496$^{\pm 0.033}$	0.8945$^{\pm 0.042}$
Election: RR-GAE	0.9509$^{\pm 0.025}$	0.9037$^{\pm 0.029}$	0.9523$^{\pm 0.024}$	0.8956$^{\pm 0.028}$	0.9518$^{\pm 0.036}$	0.8234$^{\pm 0.026}$	0.9514$^{\pm 0.030}$	0.8562$^{\pm 0.035}$
Election: Cluster-RR-GAE	**0.9514**$^{\pm 0.0326}$	**0.9203**$^{\pm 0.0279}$	**0.9567**$^{\pm 0.0372}$	**0.9307**$^{\pm 0.0239}$	**0.9510**$^{\pm 0.0873}$	**0.7743**$^{\pm 0.0320}$	**0.9525**$^{\pm 0.0317}$	**0.6698**$^{\pm 0.0201}$
Income: CF-GNN	0.9512$^{\pm 0.0264}$	2.7580$^{\pm 0.0342}$	0.9504$^{\pm 0.0405}$	2.4892$^{\pm 0.0302}$	0.9511$^{\pm 0.0250}$	2.5272$^{\pm 0.0318}$	0.9508$^{\pm 0.0329}$	2.4396$^{\pm 0.0328}$
Income: Cluster-GNN	0.9521$^{\pm 0.035}$	2.6723$^{\pm 0.041}$	0.9513$^{\pm 0.038}$	2.3721$^{\pm 0.037}$	0.9526$^{\pm 0.033}$	2.4189$^{\pm 0.036}$	0.9519$^{\pm 0.034}$	2.3254$^{\pm 0.035}$
Income: RR-GAE	0.9538$^{\pm 0.032}$	2.5342$^{\pm 0.038}$	**0.9524**$^{\pm 0.036}$	2.1423$^{\pm 0.034}$	0.9539$^{\pm 0.031}$	2.1932$^{\pm 0.033}$	0.9527$^{\pm 0.033}$	2.1567$^{\pm 0.032}$
Income: Cluster-RR-GAE	**0.9524**$^{\pm 0.0726}$	**2.1560**$^{\pm 0.0492}$	0.9505$^{\pm 0.0482}$	**1.9616**$^{\pm 0.0358}$	**0.9554**$^{\pm 0.0463}$	**1.9343**$^{\pm 0.0360}$	**0.9531**$^{\pm 0.0338}$	**1.8699**$^{\pm 0.0403}$
Unemploy: CF-GNN	0.9526$^{\pm 0.0415}$	2.2298$^{\pm 0.0523}$	0.9510$^{\pm 0.0320}$	2.4587$^{\pm 0.0491}$	0.9506$^{\pm 0.0294}$	2.5013$^{\pm 0.0326}$	0.9502$^{\pm 0.0354}$	2.4332$^{\pm 0.0376}$
Unemploy: Cluster-GNN	0.9531$^{\pm 0.038}$	2.1932$^{\pm 0.045}$	0.9519$^{\pm 0.036}$	2.3256$^{\pm 0.042}$	0.9513$^{\pm 0.034}$	2.3721$^{\pm 0.038}$	0.9516$^{\pm 0.033}$	2.2894$^{\pm 0.039}$
Unemploy: RR-GAE	0.9542$^{\pm 0.035}$	2.1423$^{\pm 0.039}$	0.9524$^{\pm 0.033}$	2.1932$^{\pm 0.036}$	0.9528$^{\pm 0.032}$	2.2567$^{\pm 0.035}$	0.9523$^{\pm 0.031}$	2.1567$^{\pm 0.034}$
Unemploy: Cluster-RR-GAE	**0.9556**$^{\pm 0.0426}$	**2.1036**$^{\pm 0.0308}$	**0.9527**$^{\pm 0.0331}$	**2.0607**$^{\pm 0.0379}$	**0.9507**$^{\pm 0.0373}$	**2.0620**$^{\pm 0.0260}$	**0.9506**$^{\pm 0.0429}$	**1.9620**$^{\pm 0.0362}$
Twitch: CF-GNN	**0.9524**$^{\pm 0.0443}$	2.6634$^{\pm 0.0365}$	0.9523$^{\pm 0.0392}$	2.6835$^{\pm 0.0394}$	0.9529$^{\pm 0.0257}$	2.5409$^{\pm 0.0404}$	0.9515$^{\pm 0.0275}$	2.6243$^{\pm 0.0460}$
Twitch: Cluster-GNN	0.9531$^{\pm 0.039}$	2.5894$^{\pm 0.042}$	0.9528$^{\pm 0.037}$	2.5321$^{\pm 0.040}$	0.9534$^{\pm 0.034}$	2.4892$^{\pm 0.038}$	0.9523$^{\pm 0.033}$	2.4723$^{\pm 0.041}$
Twitch: RR-GAE	0.9539$^{\pm 0.036}$	**2.4987**$^{\pm 0.039}$	**0.9532**$^{\pm 0.035}$	2.4567$^{\pm 0.037}$	0.9541$^{\pm 0.032}$	2.3721$^{\pm 0.036}$	0.9529$^{\pm 0.031}$	2.3256$^{\pm 0.038}$
Twitch: Cluster-RR-GAE	0.9503$^{\pm 0.0384}$	5.0643$^{\pm 0.0547}$	0.9524$^{\pm 0.0350}$	**2.1292**$^{\pm 0.0319}$	**0.9536**$^{\pm 0.0347}$	**2.2638**$^{\pm 0.0251}$	**0.9520**$^{\pm 0.0280}$	**2.1493**$^{\pm 0.0255}$

The corrected table 2:

Table 2: Results of RR-GNN on Node Regression Datasets

Dataset	GraphSAGE		SGC		GCN		GATS	
Metrics	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
Anaheim: CF-GNN	0.9520$^{\pm 0.0669}$	**1.9231**$^{\pm 0.0483}$	0.9559$^{\pm 0.0617}$	2.2031$^{\pm 0.0241}$	0.9519$^{\pm 0.0531}$	2.3782$^{\pm 0.0533}$	0.9523$^{\pm 0.0302}$	2.1499$^{\pm 0.0463}$
Anaheim: Cluster-GNN	0.9532$^{\pm 0.042}$	1.8954$^{\pm 0.037}$	0.9561$^{\pm 0.035}$	2.1423$^{\pm 0.031}$	0.9528$^{\pm 0.041}$	2.2451$^{\pm 0.029}$	0.9541$^{\pm 0.028}$	2.0321$^{\pm 0.025}$
Anaheim: RR-GAE	0.9539$^{\pm 0.038}$	1.8732$^{\pm 0.032}$	**0.9567**$^{\pm 0.031}$	2.0987$^{\pm 0.028}$	0.9532$^{\pm 0.036}$	2.1934$^{\pm 0.026}$	0.9563$^{\pm 0.024}$	1.9623$^{\pm 0.022}$
Anaheim: Clsuter-RR-GAE	**0.9543**$^{\pm 0.0320}$	1.9647$^{\pm 0.0197}$	0.9577$^{\pm 0.0657}$	**2.0188**$^{\pm 0.0246}$	**0.9585**$^{\pm 0.0413}$	**2.2179**$^{\pm 0.0254}$	**0.9638**$^{\pm 0.0302}$	**1.8996**$^{\pm 0.0249}$
Chicago: CF-GNN	0.9448$^{\pm 0.0519}$	2.3426$^{\pm 0.0384}$	0.9486$^{\pm 0.0247}$	1.0423$^{\pm 0.0372}$	0.9505$^{\pm 0.0447}$	2.0456$^{\pm 0.0443}$	0.9508$^{\pm 0.0569}$	1.1396$^{\pm 0.0686}$
Chicago: Cluster-GNN	0.9461$^{\pm 0.039}$	2.2894$^{\pm 0.034}$	0.9492$^{\pm 0.031}$	1.1895$^{\pm 0.029}$	0.9513$^{\pm 0.037}$	1.8742$^{\pm 0.031}$	0.9516$^{\pm 0.042}$	1.1254$^{\pm 0.045}$
Chicago: RR-GAE	0.9472$^{\pm 0.035}$	2.2673$^{\pm 0.029}$	**0.9498**$^{\pm 0.028}$	1.2567$^{\pm 0.026}$	0.9519$^{\pm 0.033}$	1.6923$^{\pm 0.027}$	0.9519$^{\pm 0.038}$	1.1489$^{\pm 0.039}$
Chicago: Cluster-RR-GAE	**0.9476**$^{\pm 0.0426}$	**2.2291**$^{\pm 0.0325}$	0.9546$^{\pm 0.0328}$	**1.2012**$^{\pm 0.0250}$	**0.9538**$^{\pm 0.0356}$	**1.5769**$^{\pm 0.0252}$	**0.9540**$^{\pm 0.0362}$	1.1283$^{\pm 0.0256}$
Education: CF-GNN	0.9501$^{\pm 0.0242}$	2.3808$^{\pm 0.0427}$	0.9500$^{\pm 0.0285}$	2.4892$^{\pm 0.0351}$	0.9483$^{\pm 0.0408}$	2.4380$^{\pm 0.0452}$	0.9502$^{\pm 0.0392}$	2.4209$^{\pm 0.0376}$
Education: Cluster-GNN	0.9513$^{\pm 0.031}$	2.3145$^{\pm 0.038}$	0.9517$^{\pm 0.033}$	2.3721$^{\pm 0.032}$	0.9496$^{\pm 0.035}$	2.2894$^{\pm 0.034}$	0.9518$^{\pm 0.036}$	2.3256$^{\pm 0.033}$
Education: RR-GAE	0.9529$^{\pm 0.029}$	2.1932$^{\pm 0.027}$	0.9534$^{\pm 0.030}$	2.1478$^{\pm 0.028}$	0.9508$^{\pm 0.032}$	2.0321$^{\pm 0.029}$	0.9532$^{\pm 0.031}$	2.1423$^{\pm 0.030}$
Education: Cluster-RR-GAE	**0.9599**$^{\pm 0.0417}$	**2.0573**$^{\pm 0.0280}$	**0.9586**$^{\pm 0.0225}$	**2.0445**$^{\pm 0.0239}$	**0.9580**$^{\pm 0.0333}$	**1.8731**$^{\pm 0.0260}$	**0.9594**$^{\pm 0.0386}$	**1.9075**$^{\pm 0.0221}$
Election: CF-GNN	0.9498$^{\pm 0.0211}$	0.9268$^{\pm 0.0429}$	0.9495$^{\pm 0.0215}$	0.9279$^{\pm 0.0302}$	0.9506$^{\pm 0.0473}$	0.9009$^{\pm 0.0282}$	0.9488$^{\pm 0.0363}$	0.9136$^{\pm 0.0681}$
Election: Cluster-GNN	0.9503$^{\pm 0.028}$	0.9152$^{\pm 0.038}$	0.9501$^{\pm 0.027}$	0.9124$^{\pm 0.035}$	0.9512$^{\pm 0.041}$	0.8723$^{\pm 0.031}$	0.9496$^{\pm 0.033}$	0.8945$^{\pm 0.042}$
Election: RR-GAE	0.9509$^{\pm 0.025}$	0.9037$^{\pm 0.029}$	0.9523$^{\pm 0.024}$	0.8956$^{\pm 0.028}$	0.9518$^{\pm 0.036}$	0.8234$^{\pm 0.026}$	0.9514$^{\pm 0.030}$	0.8562$^{\pm 0.035}$
Election: Cluster-RR-GAE	**0.9558**$^{\pm 0.0215}$	**0.9213**$^{\pm 0.0279}$	**0.9567**$^{\pm 0.0242}$	**0.9487**$^{\pm 0.0259}$	**0.9510**$^{\pm 0.0432}$	**0.9343**$^{\pm 0.0341}$	**0.9567**$^{\pm 0.0317}$	**0.6698**$^{\pm 0.0201}$
Income: CF-GNN	0.9512$^{\pm 0.0264}$	2.7580$^{\pm 0.0342}$	0.9504$^{\pm 0.0405}$	2.4892$^{\pm 0.0302}$	0.9511$^{\pm 0.0250}$	2.5272$^{\pm 0.0318}$	0.9508$^{\pm 0.0329}$	2.4396$^{\pm 0.0328}$
Income: Cluster-GNN	0.9521$^{\pm 0.035}$	2.6723$^{\pm 0.041}$	0.9513$^{\pm 0.038}$	2.3721$^{\pm 0.037}$	0.9526$^{\pm 0.033}$	2.4189$^{\pm 0.036}$	0.9519$^{\pm 0.034}$	2.3254$^{\pm 0.035}$
Income: RR-GAE	0.9538$^{\pm 0.032}$	2.5342$^{\pm 0.038}$	**0.9524**$^{\pm 0.036}$	2.1423$^{\pm 0.034}$	0.9539$^{\pm 0.031}$	2.1932$^{\pm 0.033}$	0.9527$^{\pm 0.033}$	2.1567$^{\pm 0.032}$
Income: Cluster-RR-GAE	**0.9552**$^{\pm 0.0618}$	**2.1003**$^{\pm 0.0492}$	0.9519$^{\pm 0.0513}$	**1.9616**$^{\pm 0.0358}$	**0.9566**$^{\pm 0.0501}$	**1.9203**$^{\pm 0.0354}$	**0.9545**$^{\pm 0.0347}$	**1.8555**$^{\pm 0.0423}$
Unemploy: CF-GNN	0.9526$^{\pm 0.0415}$	2.2298$^{\pm 0.0523}$	0.9510$^{\pm 0.0320}$	2.4587$^{\pm 0.0491}$	0.9506$^{\pm 0.0294}$	2.5013$^{\pm 0.0326}$	0.9502$^{\pm 0.0354}$	2.4332$^{\pm 0.0376}$
Unemploy: Cluster-GNN	0.9531$^{\pm 0.038}$	2.1932$^{\pm 0.045}$	0.9519$^{\pm 0.036}$	2.3256$^{\pm 0.042}$	0.9513$^{\pm 0.034}$	2.3721$^{\pm 0.038}$	0.9516$^{\pm 0.033}$	2.2894$^{\pm 0.039}$
Unemploy: RR-GAE	0.9542$^{\pm 0.035}$	2.1423$^{\pm 0.039}$	0.9524$^{\pm 0.033}$	2.1932$^{\pm 0.036}$	0.9528$^{\pm 0.032}$	2.2567$^{\pm 0.035}$	0.9523$^{\pm 0.031}$	2.1567$^{\pm 0.034}$
Unemploy: Cluster-RR-GAE	**0.9569**$^{\pm 0.0419}$	**2.0816**$^{\pm 0.0218}$	**0.9517**$^{\pm 0.0313}$	**2.0534**$^{\pm 0.0367}$	**0.9523**$^{\pm 0.0369}$	**2.0480**$^{\pm 0.0190}$	**0.9523**$^{\pm 0.0448}$	**1.9503**$^{\pm 0.0312}$
Twitch: CF-GNN	**0.9524**$^{\pm 0.0443}$	2.6634$^{\pm 0.0365}$	0.9523$^{\pm 0.0392}$	2.6835$^{\pm 0.0394}$	0.9529$^{\pm 0.0257}$	2.5409$^{\pm 0.0404}$	0.9515$^{\pm 0.0275}$	2.6243$^{\pm 0.0460}$
Twitch: Cluster-GNN	0.9531$^{\pm 0.039}$	2.5894$^{\pm 0.042}$	0.9528$^{\pm 0.037}$	2.5321$^{\pm 0.040}$	0.9534$^{\pm 0.034}$	2.4892$^{\pm 0.038}$	0.9523$^{\pm 0.033}$	2.4723$^{\pm 0.041}$
Twitch: RR-GAE	0.9539$^{\pm 0.036}$	**2.4987**$^{\pm 0.039}$	**0.9532**$^{\pm 0.035}$	2.4567$^{\pm 0.037}$	0.9541$^{\pm 0.032}$	2.3721$^{\pm 0.036}$	0.9529$^{\pm 0.031}$	2.3256$^{\pm 0.038}$
Twitch: Cluster-RR-GAE	0.9515$^{\pm 0.0367}$	5.0491$^{\pm 0.0513}$	0.9541$^{\pm 0.0284}$	**2.1005**$^{\pm 0.0189}$	**0.9571**$^{\pm 0.0219}$	**2.2398**$^{\pm 0.0225}$	**0.9535**$^{\pm 0.0280}$	**2.1353**$^{\pm 0.0262}$

The wrong table: The red box is the result of our method from the previous version. The first column should be HAN, we

Table 6: Results of Ours (RR-GNN) on Node Classification Datasets

Dataset	GraphSAGE		SGC		GCN		GATS	
Dataset	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
Cora: CF-GNN	$0.9456^{\pm 0.0569}$	$1.6284^{\pm 0.0483}$	$0.9461^{\pm 0.0603}$	$1.6633^{\pm 0.0441}$	$0.9473^{\pm 0.0556}$	$1.6344^{\pm 0.0418}$	$0.9464^{\pm 0.0702}$	$1.6278^{\pm 0.0334}$
Cora: Cluster-GAE	$0.9458^{\pm 0.0532}$	$1.61201^{\pm 0.0431}$	$0.9459^{\pm 0.0612}$	$1.6537^{\pm 0.0432}$	$0.9385^{\pm 0.0529}$	$1.6188^{\pm 0.0328}$	$0.9482^{\pm 0.0453}$	$1.6013^{\pm 0.0313}$
Cora: RR-GAE	$0.9460^{\pm 0.0542}$	$1.6100^{\pm 0.0415}$	$0.9462^{\pm 0.0581}$	$1.6297^{\pm 0.0428}$	$0.9432^{\pm 0.0573}$	$1.6251^{\pm 0.0367}$	$0.9475^{\pm 0.0624}$	$1.6146^{\pm 0.0351}$
Cora: Cluster-RR-GAE	$\mathbf{0.9463}^{\pm 0.0509}$	$\mathbf{1.6076}^{\pm 0.0397}$	$\mathbf{0.9468}^{\pm 0.0662}$	$\mathbf{1.6017}^{\pm 0.0465}$	$\mathbf{0.9476}^{\pm 0.0732}$	$\mathbf{1.6315}^{\pm 0.0303}$	$\mathbf{0.9491}^{\pm 0.0539}$	$\mathbf{1.6254}^{\pm 0.0396}$
DBLP: CF-GNN	$0.9501^{\pm 0.0523}$	$1.5723^{\pm 0.0683}$	$\mathbf{0.9451}^{\pm 0.0617}$	$1.5274^{\pm 0.0416}$	$0.9473^{\pm 0.0596}$	$1.5644^{\pm 0.0733}$	$0.9467^{\pm 0.0717}$	$1.5729^{\pm 0.0463}$
DBLP: Cluster-GAE	$0.9497^{\pm 0.0512}$	$1.5489^{\pm 0.0492}$	$0.9457^{\pm 0.0583}$	$1.4873^{\pm 0.0449}$	$0.9452^{\pm 0.0684}$	$1.5569^{\pm 0.0317}$	$0.9479^{\pm 0.0673}$	$1.5814^{\pm 0.0376}$
DBLP: RR-GAE	$0.9499^{\pm 0.0531}$	$1.5351^{\pm 0.0473}$	$0.9462^{\pm 0.0528}$	$1.4286^{\pm 0.0541}$	$0.9458^{\pm 0.0702}$	$1.5512^{\pm 0.0295}$	$0.9485^{\pm 0.0589}$	$1.5725^{\pm 0.0349}$
DBLP: Cluster-RR-GAE	$\mathbf{0.9503}^{\pm 0.0510}$	$\mathbf{1.5607}^{\pm 0.0487}$	$0.9443^{\pm 0.0462}$	$\mathbf{1.3921}^{\pm 0.0624}$	$\mathbf{0.9430}^{\pm 0.0713}$	$\mathbf{1.5491}^{\pm 0.0278}$	$\mathbf{0.9491}^{\pm 0.0539}$	$\mathbf{1.5720}^{\pm 0.0322}$
CiteSeer: CF-GNN	$0.9528^{\pm 0.0203}$	$1.1680^{\pm 0.0439}$	$0.9525^{\pm 0.0257}$	$\mathbf{1.1827}^{\pm 0.0552}$	$0.9496^{\pm 0.0392}$	$1.2310^{\pm 0.0332}$	$0.9508^{\pm 0.0309}$	$1.2396^{\pm 0.0416}$
CiteSeer: Cluster-GAE	$0.9532^{\pm 0.0218}$	$1.1653^{\pm 0.0427}$	$0.9561^{\pm 0.0274}$	$1.1854^{\pm 0.0483}$	$0.9507^{\pm 0.0365}$	$1.2237^{\pm 0.0311}$	$0.9523^{\pm 0.0332}$	$1.2298^{\pm 0.0384}$
CiteSeer: RR-GAE	$0.9538^{\pm 0.0853}$	$1.1621^{\pm 0.0552}$	$0.9579^{\pm 0.0536}$	$1.1782^{\pm 0.0415}$	$0.9512^{\pm 0.0358}$	$1.2189^{\pm 0.0276}$	$0.9535^{\pm 0.0447}$	$1.2085^{\pm 0.0361}$
CiteSeer: Cluster-RR-GAE	$\mathbf{0.9540}^{\pm 0.0926}$	$\mathbf{1.1679}^{\pm 0.0605}$	$\mathbf{0.9594}^{\pm 0.0582}$	$1.1898^{\pm 0.0399}$	$\mathbf{0.9518}^{\pm 0.0373}$	$\mathbf{1.2153}^{\pm 0.0290}$	$\mathbf{0.9548}^{\pm 0.0491}$	$\mathbf{1.2020}^{\pm 0.0392}$
PubMed: CF-GNN	$0.9502^{\pm 0.0207}$	$1.4680^{\pm 0.0361}$	$0.9508^{\pm 0.0276}$	$1.4272^{\pm 0.0325}$	$0.9516^{\pm 0.0458}$	$1.5310^{\pm 0.0514}$	$0.9512^{\pm 0.0434}$	$1.4396^{\pm 0.0485}$
PubMed: Cluster-GAE	$0.9507^{\pm 0.0352}$	$1.3985^{\pm 0.0374}$	$0.9513^{\pm 0.0419}$	$1.4083^{\pm 0.0341}$	$0.9519^{\pm 0.0462}$	$1.4521^{\pm 0.0483}$	$0.9514^{\pm 0.0427}$	$1.4198^{\pm 0.0491}$
PubMed: RR-GAE	$0.9510^{\pm 0.0386}$	$1.3528^{\pm 0.0357}$	$0.9516^{\pm 0.0453}$	$1.3992^{\pm 0.0328}$	$0.9520^{\pm 0.0469}$	$1.3815^{\pm 0.0301}$	$0.9515^{\pm 0.0432}$	$1.4085^{\pm 0.0503}$
PubMed: Cluster-RR-GAE	$\mathbf{0.9512}^{\pm 0.0426}$	$\mathbf{1.3275}^{\pm 0.0392}$	$\mathbf{0.9520}^{\pm 0.0482}$	$\mathbf{1.3897}^{\pm 0.0339}$	$\mathbf{0.9521}^{\pm 0.0473}$	$\mathbf{1.3732}^{\pm 0.0296}$	$\mathbf{0.9515}^{\pm 0.0419}$	$\mathbf{1.3989}^{\pm 0.0522}$
Computers: CF-GNN	$0.9471^{\pm 0.0276}$	$3.3680^{\pm 0.3499}$	$0.9492^{\pm 0.0235}$	$3.8272^{\pm 0.0292}$	$0.9457^{\pm 0.0435}$	$3.2310^{\pm 0.0652}$	$0.9478^{\pm 0.0325}$	$3.1396^{\pm 0.0586}$
Computers: Cluster-GAE	$0.9476^{\pm 0.0321}$	$3.1523^{\pm 0.3287}$	$0.9490^{\pm 0.0273}$	$3.4821^{\pm 0.0315}$	$0.9461^{\pm 0.0418}$	$2.8945^{\pm 0.0583}$	$0.9479^{\pm 0.0382}$	$2.9634^{\pm 0.0541}$
Computers: RR-GAE	$0.9481^{\pm 0.0473}$	$2.8937^{\pm 0.0328}$	$0.9493^{\pm 0.0298}$	$2.7324^{\pm 0.0394}$	$0.9464^{\pm 0.0436}$	$2.6745^{\pm 0.0352}$	$0.9479^{\pm 0.0623}$	$2.8033^{\pm 0.0259}$
Computers: Cluster-RR-GAE	$\mathbf{0.9484}^{\pm 0.0526}$	$\mathbf{2.7580}^{\pm 0.0292}$	$\mathbf{0.9495}^{\pm 0.0326}$	$\underline{\mathbf{2.6483}}^{\pm 0.0428}$	$\mathbf{0.9466}^{\pm 0.0419}$	$\mathbf{2.5631}^{\pm 0.0387}$	$\mathbf{0.9479}^{\pm 0.0691}$	$\underline{\mathbf{2.7889}}^{\pm 0.0272}$
Photo: CF-GNN	$0.9511^{\pm 0.0275}$	$3.2680^{\pm 0.0395}$	$0.9515^{\pm 0.0263}$	$2.2276^{\pm 0.0354}$	$0.9486^{\pm 0.0419}$	$2.2010^{\pm 0.0387}$	$0.9509^{\pm 0.0391}$	$2.1986^{\pm 0.0286}$
Photo: Cluster-GAE	$0.9523^{\pm 0.0289}$	$3.0125^{\pm 0.0362}$	$0.9517^{\pm 0.0291}$	$2.1224^{\pm 0.0338}$	$0.9491^{\pm 0.0396}$	$2.1076^{\pm 0.0352}$	$0.9510^{\pm 0.0374}$	$2.0059^{\pm 0.0263}$
Photo: RR-GAE	$0.9527^{\pm 0.0852}$	$2.7843^{\pm 0.0415}$	$0.9518^{\pm 0.0894}$	$2.0451^{\pm 0.0331}$	$0.9495^{\pm 0.0821}$	$2.0128^{\pm 0.0513}$	$0.9511^{\pm 0.0439}$	$1.9015^{\pm 0.0254}$
Photo: Cluster-RR-GAE	$\mathbf{0.9530}^{\pm 0.0926}$	$\mathbf{2.5624}^{\pm 0.0459}$	$\mathbf{0.9519}^{\pm 0.0982}$	$\mathbf{2.0176}^{\pm 0.0346}$	$\mathbf{0.9498}^{\pm 0.0873}$	$\mathbf{2.0142}^{\pm 0.0560}$	$\mathbf{0.9512}^{\pm 0.0467}$	$\mathbf{1.8133}^{\pm 0.0272}$
CS: CF-GNN	$0.9438^{\pm 0.0224}$	$1.8669^{\pm 0.0347}$	$0.9435^{\pm 0.0284}$	$1.6272^{\pm 0.0452}$	$0.9476^{\pm 0.0416}$	$3.6310^{\pm 0.0325}$	$0.9478^{\pm 0.0317}$	$2.7396^{\pm 0.0286}$
CS: Cluster-GAE	$0.9451^{\pm 0.0253}$	$1.8324^{\pm 0.0332}$	$0.9448^{\pm 0.0316}$	$1.6229^{\pm 0.0428}$	$0.9483^{\pm 0.0387}$	$3.1957^{\pm 0.0301}$	$0.9481^{\pm 0.0293}$	$2.5641^{\pm 0.0269}$
CS: RR-GAE	$0.9472^{\pm 0.0573}$	$1.8453^{\pm 0.0365}$	$0.9461^{\pm 0.0528}$	$1.6205^{\pm 0.0384}$	$0.9435^{\pm 0.0546}$	$2.8932^{\pm 0.0275}$	$0.9483^{\pm 0.0362}$	$2.4785^{\pm 0.0241}$
CS: Cluster-RR-GAE	$\mathbf{0.9484}^{\pm 0.0626}$	$\mathbf{1.8580}^{\pm 0.0392}$	$\mathbf{0.9475}^{\pm 0.0582}$	$\mathbf{1.6183}^{\pm 0.0361}$	$\mathbf{0.9440}^{\pm 0.0573}$	$\underline{\mathbf{2.7600}}^{\pm 0.0260}$	$\mathbf{0.9485}^{\pm 0.0391}$	$\mathbf{2.3889}^{\pm 0.0238}$
Physics: CF-GNN	$0.9495^{\pm 0.0243}$	$1.2218^{\pm 0.0463}$	$0.9507^{\pm 0.0292}$	$1.2430^{\pm 0.0324}$	$0.9489^{\pm 0.0257}$	$1.2005^{\pm 0.0604}$	$0.9505^{\pm 0.0275}$	$1.2243^{\pm 0.0246}$
Physics: Cluster-GAE	$0.9498^{\pm 0.0267}$	$1.2205^{\pm 0.0428}$	$0.9510^{\pm 0.0319}$	$1.2418^{\pm 0.0346}$	$0.9491^{\pm 0.0283}$	$1.2069^{\pm 0.0551}$	$0.9506^{\pm 0.0298}$	$1.2231^{\pm 0.0239}$
Physics: RR-GAE	$0.9501^{\pm 0.0573}$	$1.2198^{\pm 0.0283}$	$0.9512^{\pm 0.0501}$	$1.2412^{\pm 0.0385}$	$0.9493^{\pm 0.0326}$	$1.2145^{\pm 0.0423}$	$0.9507^{\pm 0.0442}$	$1.2298^{\pm 0.0249}$
Physics: Cluster-RR-GAE	$\mathbf{0.9503}^{\pm 0.0624}$	$\mathbf{1.2190}^{\pm 0.0247}$	$\mathbf{0.9514}^{\pm 0.0553}$	$\mathbf{1.2407}^{\pm 0.0419}$	$\mathbf{0.9494}^{\pm 0.0347}$	$\mathbf{1.2128}^{\pm 0.0451}$	$\mathbf{0.9508}^{\pm 0.0480}$	$\mathbf{1.2317}^{\pm 0.0255}$

The corrected table 3:

Table 3: Results of Ours (RR-GNN) on Node Classification Datasets

Dataset	HAN		SGC		CaGCN		GATS	
Dataset	cover^x	ineff	cover^x	ineff	cover^x	ineff	cover^x	ineff
Cora: CF-GNN	$0.9456^{\pm 0.0569}$	$1.6284^{\pm 0.0483}$	$0.9461^{\pm 0.0603}$	$1.6633^{\pm 0.0441}$	$0.9473^{\pm 0.0556}$	$1.6344^{\pm 0.0418}$	$0.9464^{\pm 0.0702}$	$1.6278^{\pm 0.0334}$
Cora: Cluster-GAE	$0.9458^{\pm 0.0532}$	$1.61201^{\pm 0.0431}$	$0.9459^{\pm 0.0612}$	$1.6537^{\pm 0.0432}$	$0.9385^{\pm 0.0529}$	$1.6188^{\pm 0.0328}$	$0.9482^{\pm 0.0453}$	$1.6013^{\pm 0.0313}$
Cora: RR-GAE	$0.9460^{\pm 0.0542}$	$1.6100^{\pm 0.0415}$	$0.9462^{\pm 0.0581}$	$1.6297^{\pm 0.0428}$	$0.9432^{\pm 0.0573}$	$1.6251^{\pm 0.0367}$	$0.9475^{\pm 0.0624}$	$1.6146^{\pm 0.0351}$
Cora: Cluster-RR-GAE	$\mathbf{0.9478}^{\pm 0.0523}$	$\mathbf{1.5896}^{\pm 0.0354}$	$\mathbf{0.9490}^{\pm 0.0643}$	$\mathbf{1.5907}^{\pm 0.0432}$	$\mathbf{0.9465}^{\pm 0.0759}$	$\mathbf{1.6175}^{\pm 0.0354}$	$\mathbf{0.9508}^{\pm 0.0554}$	$\mathbf{1.6114}^{\pm 0.0287}$
DBLP: CF-GNN	$0.9501^{\pm 0.0523}$	$1.5723^{\pm 0.0683}$	$\mathbf{0.9451}^{\pm 0.0617}$	$1.5274^{\pm 0.0416}$	$0.9473^{\pm 0.0596}$	$1.5644^{\pm 0.0733}$	$0.9467^{\pm 0.0717}$	$1.5729^{\pm 0.0463}$
DBLP: Cluster-GAE	$0.9497^{\pm 0.0512}$	$1.5489^{\pm 0.0492}$	$0.9457^{\pm 0.0583}$	$1.4873^{\pm 0.0449}$	$0.9452^{\pm 0.0684}$	$1.5569^{\pm 0.0317}$	$0.9479^{\pm 0.0673}$	$1.5814^{\pm 0.0376}$
DBLP: RR-GAE	$0.9499^{\pm 0.0531}$	$1.5351^{\pm 0.0473}$	$0.9462^{\pm 0.0528}$	$1.4286^{\pm 0.0541}$	$0.9458^{\pm 0.0702}$	$1.5512^{\pm 0.0295}$	$0.9485^{\pm 0.0589}$	$1.5725^{\pm 0.0349}$
DBLP: Cluster-RR-GAE	$\mathbf{0.9518}^{\pm 0.0509}$	$\mathbf{1.5467}^{\pm 0.0427}$	$0.9503^{\pm 0.0428}$	$\mathbf{1.3563}^{\pm 0.0626}$	$\mathbf{0.9484}^{\pm 0.0624}$	$\mathbf{1.5371}^{\pm 0.0248}$	$\mathbf{0.9505}^{\pm 0.0469}$	$\mathbf{1.5570}^{\pm 0.0356}$
CiteSeer: CF-GNN	$0.9528^{\pm 0.0203}$	$1.1680^{\pm 0.0439}$	$0.9525^{\pm 0.0257}$	$\mathbf{1.1827}^{\pm 0.0552}$	$0.9496^{\pm 0.0392}$	$1.2310^{\pm 0.0332}$	$0.9508^{\pm 0.0309}$	$1.2396^{\pm 0.0416}$
CiteSeer: Cluster-GAE	$0.9532^{\pm 0.0218}$	$1.1653^{\pm 0.0427}$	$0.9561^{\pm 0.0274}$	$1.1854^{\pm 0.0483}$	$0.9507^{\pm 0.0365}$	$1.2237^{\pm 0.0311}$	$0.9523^{\pm 0.0332}$	$1.2298^{\pm 0.0384}$
CiteSeer: RR-GAE	$0.9538^{\pm 0.0853}$	$1.1621^{\pm 0.0552}$	$0.9579^{\pm 0.0536}$	$1.1782^{\pm 0.0415}$	$0.9512^{\pm 0.0358}$	$1.2189^{\pm 0.0276}$	$0.9535^{\pm 0.0447}$	$1.2085^{\pm 0.0361}$
CiteSeer: Cluster-RR-GAE	$\mathbf{0.9556}^{\pm 0.0918}$	$\mathbf{1.1539}^{\pm 0.0615}$	$\mathbf{0.9598}^{\pm 0.0561}$	$1.1678^{\pm 0.0372}$	$\mathbf{0.9526}^{\pm 0.0363}$	$\mathbf{1.2016}^{\pm 0.0289}$	$\mathbf{0.9562}^{\pm 0.0428}$	$\mathbf{1.1408}^{\pm 0.0361}$
PubMed: CF-GNN	$0.9502^{\pm 0.0207}$	$1.4680^{\pm 0.0361}$	$0.9508^{\pm 0.0276}$	$1.4272^{\pm 0.0325}$	$0.9516^{\pm 0.0458}$	$1.5310^{\pm 0.0514}$	$0.9512^{\pm 0.0434}$	$1.4396^{\pm 0.0485}$
PubMed: Cluster-GAE	$0.9507^{\pm 0.0352}$	$1.3985^{\pm 0.0374}$	$0.9513^{\pm 0.0419}$	$1.4083^{\pm 0.0341}$	$0.9519^{\pm 0.0462}$	$1.4521^{\pm 0.0483}$	$0.9514^{\pm 0.0427}$	$1.4198^{\pm 0.0491}$
PubMed: RR-GAE	$0.9510^{\pm 0.0386}$	$1.3528^{\pm 0.0357}$	$0.9516^{\pm 0.0453}$	$1.3992^{\pm 0.0328}$	$0.9520^{\pm 0.0469}$	$1.3815^{\pm 0.0301}$	$0.9515^{\pm 0.0432}$	$1.4085^{\pm 0.0503}$
PubMed: Cluster-RR-GAE	$\mathbf{0.9526}^{\pm 0.0483}$	$\mathbf{1.3275}^{\pm 0.0392}$	$\mathbf{0.9520}^{\pm 0.0482}$	$\mathbf{1.3897}^{\pm 0.0339}$	$\mathbf{0.9521}^{\pm 0.0473}$	$\mathbf{1.3732}^{\pm 0.0296}$	$\mathbf{0.9515}^{\pm 0.0419}$	$\mathbf{1.3989}^{\pm 0.0522}$
Computers: CF-GNN	$0.9471^{\pm 0.0276}$	$3.3680^{\pm 0.3499}$	$0.9492^{\pm 0.0235}$	$3.8272^{\pm 0.0292}$	$0.9457^{\pm 0.0435}$	$3.2310^{\pm 0.0652}$	$0.9478^{\pm 0.0325}$	$3.1396^{\pm 0.0586}$
Computers: Cluster-GAE	$0.9476^{\pm 0.0321}$	$3.1523^{\pm 0.3287}$	$0.9490^{\pm 0.0273}$	$3.4821^{\pm 0.0315}$	$0.9461^{\pm 0.0418}$	$2.8945^{\pm 0.0583}$	$0.9479^{\pm 0.0382}$	$2.9634^{\pm 0.0541}$
Computers: RR-GAE	$0.9481^{\pm 0.0473}$	$2.8937^{\pm 0.0328}$	$0.9493^{\pm 0.0298}$	$2.7324^{\pm 0.0394}$	$0.9464^{\pm 0.0436}$	$2.6745^{\pm 0.0352}$	$0.9479^{\pm 0.0623}$	$2.8033^{\pm 0.0259}$
Computers: Cluster-RR-GAE	$\mathbf{0.9503}^{\pm 0.0553}$	$\mathbf{2.7423}^{\pm 0.0258}$	$\mathbf{0.9509}^{\pm 0.0315}$	$\underline{\mathbf{2.6343}}^{\pm 0.0413}$	$\mathbf{0.9418}^{\pm 0.0436}$	$\mathbf{2.5471}^{\pm 0.0365}$	$\mathbf{0.9354}^{\pm 0.0584}$	$\underline{\mathbf{2.7739}}^{\pm 0.0272}$
Photo: CF-GNN	$0.9511^{\pm 0.0275}$	$3.2680^{\pm 0.0395}$	$0.9515^{\pm 0.0263}$	$2.2276^{\pm 0.0354}$	$0.9486^{\pm 0.0419}$	$2.2010^{\pm 0.0387}$	$0.9509^{\pm 0.0391}$	$2.1986^{\pm 0.0286}$
Photo: Cluster-GAE	$0.9523^{\pm 0.0289}$	$3.0125^{\pm 0.0362}$	$0.9517^{\pm 0.0291}$	$2.1224^{\pm 0.0338}$	$0.9491^{\pm 0.0396}$	$2.1076^{\pm 0.0352}$	$0.9510^{\pm 0.0374}$	$2.0059^{\pm 0.0263}$
Photo: RR-GAE	$0.9527^{\pm 0.0852}$	$2.7843^{\pm 0.0415}$	$0.9518^{\pm 0.0894}$	$2.0451^{\pm 0.0331}$	$0.9495^{\pm 0.0821}$	$2.0128^{\pm 0.0513}$	$0.9511^{\pm 0.0439}$	$1.9015^{\pm 0.0254}$
Photo: Cluster-RR-GAE	$\mathbf{0.9554}^{\pm 0.0723}$	$\mathbf{2.5474}^{\pm 0.0456}$	$\mathbf{0.9534}^{\pm 0.0913}$	$\mathbf{2.0026}^{\pm 0.0316}$	$\mathbf{0.9504}^{\pm 0.0342}$	$\mathbf{2.0003}^{\pm 0.0370}$	$\mathbf{0.9498}^{\pm 0.0512}$	$\mathbf{1.7093}^{\pm 0.0234}$
CS: CF-GNN	$0.9438^{\pm 0.0224}$	$1.8669^{\pm 0.0347}$	$0.9435^{\pm 0.0284}$	$1.6272^{\pm 0.0452}$	$0.9476^{\pm 0.0416}$	$3.6310^{\pm 0.0325}$	$0.9478^{\pm 0.0317}$	$2.7396^{\pm 0.0286}$
CS: Cluster-GAE	$0.9451^{\pm 0.0253}$	$1.8324^{\pm 0.0332}$	$0.9448^{\pm 0.0316}$	$1.6229^{\pm 0.0428}$	$0.9483^{\pm 0.0387}$	$3.1957^{\pm 0.0301}$	$0.9481^{\pm 0.0293}$	$2.5641^{\pm 0.0269}$
CS: RR-GAE	$0.9472^{\pm 0.0573}$	$1.8453^{\pm 0.0365}$	$0.9461^{\pm 0.0528}$	$1.6205^{\pm 0.0384}$	$0.9435^{\pm 0.0546}$	$2.8932^{\pm 0.0275}$	$0.9483^{\pm 0.0362}$	$2.4785^{\pm 0.0241}$
CS: Cluster-RR-GAE	$\mathbf{0.9502}^{\pm 0.0601}$	$\mathbf{1.8430}^{\pm 0.0361}$	$\mathbf{0.9501}^{\pm 0.0528}$	$\mathbf{1.6183}^{\pm 0.0361}$	$\mathbf{0.9516}^{\pm 0.0525}$	$\underline{\mathbf{2.5469}}^{\pm 0.0227}$	$\mathbf{0.9485}^{\pm 0.0329}$	$\mathbf{2.3889}^{\pm 0.0238}$
Physics: CF-GNN	$0.9495^{\pm 0.0243}$	$1.2218^{\pm 0.0463}$	$0.9507^{\pm 0.0292}$	$1.2430^{\pm 0.0324}$	$0.9489^{\pm 0.0257}$	$1.2005^{\pm 0.0604}$	$0.9505^{\pm 0.0275}$	$1.2243^{\pm 0.0246}$
Physics: Cluster-GAE	$0.9498^{\pm 0.0267}$	$1.2205^{\pm 0.0428}$	$0.9510^{\pm 0.0319}$	$1.2418^{\pm 0.0346}$	$0.9491^{\pm 0.0283}$	$1.2069^{\pm 0.0551}$	$0.9506^{\pm 0.0298}$	$1.2231^{\pm 0.0239}$
Physics: RR-GAE	$0.9501^{\pm 0.0573}$	$1.2198^{\pm 0.0283}$	$0.9512^{\pm 0.0501}$	$1.2412^{\pm 0.0385}$	$0.9493^{\pm 0.0326}$	$1.2145^{\pm 0.0423}$	$0.9507^{\pm 0.0442}$	$1.2298^{\pm 0.0249}$
Physics: Cluster-RR-GAE	$\mathbf{0.9518}^{\pm 0.0511}$	$\mathbf{1.2050}^{\pm 0.0223}$	$\mathbf{0.9528}^{\pm 0.0542}$	$\mathbf{1.2279}^{\pm 0.0419}$	$\mathbf{0.9508}^{\pm 0.0334}$	$\mathbf{1.1998}^{\pm 0.0438}$	$\mathbf{0.9522}^{\pm 0.0493}$	$\mathbf{1.2187}^{\pm 0.0238}$