

dataset	feature	type	algorithm	AUC	AP
arxiv	spectral features	Traditional	common_neighbors	0.992926	0.995241
			jaccard_coefficient	0.993405	0.995717
			adamic_adar	0.993616	0.995878
			resource_allocation	0.993995	0.996115
			preferential_attachment	0.871365	0.928192
		GNN	gcn	0.723657	0.753634
			graphsage	0.592240	0.537804
			gat	0.489549	0.462572
dblp	node degree	Traditional	common_neighbors	0.964497	0.993826
			jaccard_coefficient	0.964483	0.993828
			adamic_adar	0.964518	0.993832
			resource_allocation	0.964515	0.993831
			preferential_attachment	0.839437	0.980442
		GNN	gcn	0.700245	0.747895
			graphsage	0.696224	0.747365
			gat	0.671545	0.698626
hep-ph	node degree	Traditional	common_neighbors	0.967850	0.987801
			jaccard_coefficient	0.967143	0.987721
			adamic_adar	0.968348	0.988110
			resource_allocation	0.968566	0.988202
			preferential_attachment	0.840973	0.953636
		GNN	gcn	0.748283	0.759426
			graphsage	0.767715	0.775935
			gat	0.666812	0.653841

Table 1: Link Prediction Performance of Traditional Algorithms and GNN Models on arxiv, dblp, and hep-ph Datasets Using Spectral Features or Node Degree