

Table 1: Classification accuracy on 10 node classification datasets. Due to space limitations, the performances of LS and KD are omitted. The best performance among the baselines in this table is highlighted in **bold**.

	Cora	CiteSeer	PubMed	Computers	Photo	Chameleon	Actor	Squirrel	Texas	Cornell
GCN	87.14 $\pm$ 1.01	79.86 $\pm$ 0.67	86.74 $\pm$ 0.27	83.32 $\pm$ 0.33	88.26 $\pm$ 0.73	59.61 $\pm$ 2.21	33.23 $\pm$ 1.16	46.78 $\pm$ 0.87	77.38 $\pm$ 3.28	65.90 $\pm$ 4.43
+SALS	88.10 $\pm$ 1.08	80.52 $\pm$ 0.85	87.23 $\pm$ 0.13	88.88 $\pm$ 0.54	93.80 $\pm$ 0.31	63.00 $\pm$ 1.75	33.24 $\pm$ 0.92	49.16 $\pm$ 0.77	70.00 $\pm$ 3.93	58.36 $\pm$ 7.54
+ALS	88.10 $\pm$ 0.85	81.02 $\pm$ 0.52	87.30 $\pm$ 0.30	89.18 $\pm$ 0.36	93.88 $\pm$ 0.27	64.11 $\pm$ 1.29	34.05 $\pm$ 0.49	47.44 $\pm$ 0.76	77.38 $\pm$ 2.13	71.64 $\pm$ 3.28
+PosteL	88.56$\pm$0.90	82.10$\pm$0.50	88.00$\pm$0.25	89.30$\pm$0.23	94.08$\pm$0.35	65.80$\pm$1.23	35.16$\pm$0.43	52.76$\pm$0.64	80.82$\pm$2.79	80.33$\pm$1.80
Δ	+1.42($\uparrow$)	+2.24($\uparrow$)	+1.26($\uparrow$)	+5.98($\uparrow$)	+5.82($\uparrow$)	+6.19($\uparrow$)	+1.93($\uparrow$)	+5.98($\uparrow$)	+3.44($\uparrow$)	+14.43($\uparrow$)
GAT	88.03 $\pm$ 0.79	80.52 $\pm$ 0.71	87.04 $\pm$ 0.24	83.32 $\pm$ 0.39	90.94 $\pm$ 0.68	63.13 $\pm$ 1.93	33.93 $\pm$ 2.47	44.49 $\pm$ 0.88	80.82$\pm$2.13	78.21 $\pm$ 2.95
+SALS	88.64 $\pm$ 0.94	81.23 $\pm$ 0.59	86.49 $\pm$ 0.25	88.75 $\pm$ 0.36	93.74 $\pm$ 0.37	62.76 $\pm$ 1.42	33.91 $\pm$ 1.41	42.29 $\pm$ 0.94	74.92 $\pm$ 4.43	65.57 $\pm$ 10.00
+ALS	88.60 $\pm$ 0.92	81.09 $\pm$ 0.68	87.06 $\pm$ 0.24	89.57 $\pm$ 0.35	94.16 $\pm$ 0.36	66.15 $\pm$ 1.25	34.05 $\pm$ 0.52	46.85 $\pm$ 1.45	78.03 $\pm$ 3.11	75.08 $\pm$ 3.77
+PosteL	89.21$\pm$1.08	82.13$\pm$0.64	87.08$\pm$0.19	89.60$\pm$0.29	94.31$\pm$0.31	66.28$\pm$1.14	35.92$\pm$0.72	49.38$\pm$1.05	80.33 $\pm$ 2.62	80.33$\pm$1.81
Δ	+1.18($\uparrow$)	+1.61($\uparrow$)	+0.04($\uparrow$)	+6.28($\uparrow$)	+3.37($\uparrow$)	+3.15($\uparrow$)	+1.99($\uparrow$)	+4.89($\uparrow$)	-0.49($\downarrow$)	+2.12($\uparrow$)
APNP	88.14 $\pm$ 0.73	80.47 $\pm$ 0.74	88.12 $\pm$ 0.31	85.32 $\pm$ 0.37	88.51 $\pm$ 0.31	51.84 $\pm$ 1.82	39.66 $\pm$ 0.55	34.71 $\pm$ 0.57	90.98 $\pm$ 1.64	91.81 $\pm$ 1.96
+SALS	88.97 $\pm$ 0.90	81.53 $\pm$ 0.56	88.50 $\pm$ 0.31	86.49 $\pm$ 0.50	93.74 $\pm$ 0.38	52.82 $\pm$ 1.95	39.66 $\pm$ 0.64	36.34 $\pm$ 0.65	83.44 $\pm$ 3.93	89.51 $\pm$ 3.77
+ALS	88.93 $\pm$ 0.94	81.75 $\pm$ 0.59	89.30$\pm$0.30	87.32 $\pm$ 0.23	94.33 $\pm$ 0.24	53.44 $\pm$ 1.99	39.89 $\pm$ 0.67	36.11 $\pm$ 0.81	90.82 $\pm$ 2.62	92.13 $\pm$ 1.48
+PosteL	89.62$\pm$0.84	82.47$\pm$0.66	89.17 $\pm$ 0.26	87.46$\pm$0.29	94.42$\pm$0.24	53.83$\pm$1.66	40.18$\pm$0.70	36.71$\pm$0.60	92.13$\pm$1.48	93.44$\pm$1.64
Δ	+1.48($\uparrow$)	+2.00($\uparrow$)	+1.05($\uparrow$)	+2.14($\uparrow$)	+5.91($\uparrow$)	+1.99($\uparrow$)	+0.52($\uparrow$)	+2.00($\uparrow$)	+1.15($\uparrow$)	+1.63($\uparrow$)
MLP	76.96 $\pm$ 0.95	76.58 $\pm$ 0.88	85.94 $\pm$ 0.22	82.85 $\pm$ 0.38	84.72 $\pm$ 0.34	46.85 $\pm$ 1.51	40.19$\pm$0.56	31.03 $\pm$ 1.18	91.45 $\pm$ 1.14	90.82 $\pm$ 1.63
+SALS	77.29 $\pm$ 0.95	77.00 $\pm$ 0.90	85.78 $\pm$ 0.33	82.55 $\pm$ 0.51	89.11 $\pm$ 0.52	43.68 $\pm$ 1.69	39.47 $\pm$ 0.73	30.88 $\pm$ 0.68	86.39 $\pm$ 0.99	89.11 $\pm$ 0.52
+ALS	77.59 $\pm$ 0.69	77.24 $\pm$ 0.82	86.43 $\pm$ 0.43	84.26$\pm$0.66	89.86 $\pm$ 0.43	48.03 $\pm$ 1.38	39.98 $\pm$ 0.94	31.33 $\pm$ 0.89	91.64 $\pm$ 3.44	91.64 $\pm$ 3.31
+PosteL	78.39$\pm$0.94	78.40$\pm$0.71	86.51$\pm$0.33	84.20 $\pm$ 0.55	89.90$\pm$0.27	48.51$\pm$1.66	40.15 $\pm$ 0.46	33.11$\pm$0.60	92.95$\pm$1.31	93.61$\pm$1.80
Δ	+1.43($\uparrow$)	+1.82($\uparrow$)	+0.57($\uparrow$)	+1.35($\uparrow$)	+5.18($\uparrow$)	+1.66($\uparrow$)	-0.04($\downarrow$)	+2.08($\uparrow$)	+1.50($\uparrow$)	+2.79($\uparrow$)
ChebNet	86.67 $\pm$ 0.82	79.11 $\pm$ 0.75	87.95 $\pm$ 0.28	87.54 $\pm$ 0.43	93.77 $\pm$ 0.32	59.28 $\pm$ 1.25	37.61 $\pm$ 0.89	40.55 $\pm$ 0.42	86.22 $\pm$ 2.45	83.93 $\pm$ 2.13
+SALS	87.31 $\pm$ 0.94	79.71 $\pm$ 0.83	88.46 $\pm$ 0.30	89.52 $\pm$ 0.35	94.19 $\pm$ 0.27	56.94 $\pm$ 2.52	39.25 $\pm$ 0.67	41.61 $\pm$ 0.93	74.26 $\pm$ 3.61	73.44 $\pm$ 0.89
+ALS	87.39 $\pm$ 0.97	79.81 $\pm$ 0.81	88.80 $\pm$ 0.33	89.88 $\pm$ 0.36	95.21$\pm$0.23	61.09 $\pm$ 0.63	39.61$\pm$1.12	41.98 $\pm$ 0.85	85.57 $\pm$ 3.28	86.39 $\pm$ 2.30
+PosteL	88.57$\pm$0.92	82.48$\pm$0.52	89.20$\pm$0.31	89.95$\pm$0.40	94.87$\pm$0.25	66.83$\pm$0.77	39.56 $\pm$ 0.51	88.87$\pm$0.90	86.39$\pm$2.46	88.52$\pm$2.63
Δ	+1.90($\uparrow$)	+3.37($\uparrow$)	+1.25($\uparrow$)	+2.41($\uparrow$)	+1.10($\uparrow$)	+7.55($\uparrow$)	+1.95($\uparrow$)	+10.32($\uparrow$)	+0.17($\uparrow$)	+4.59($\uparrow$)
GPR-GNN	88.57 $\pm$ 0.69	80.12 $\pm$ 0.83	88.46 $\pm$ 0.33	86.85 $\pm$ 0.25	93.85 $\pm$ 0.28	67.28 $\pm$ 1.09	39.92 $\pm$ 0.67	50.15 $\pm$ 1.92	92.95 $\pm$ 1.31	91.37 $\pm$ 1.81
+SALS	88.78 $\pm$ 0.90	80.71 $\pm$ 0.91	90.12 $\pm$ 0.46	88.63 $\pm$ 0.35	94.23 $\pm$ 0.65	65.16 $\pm$ 1.49	39.67 $\pm$ 0.73	44.75 $\pm$ 1.45	73.61 $\pm$ 3.44	82.46 $\pm$ 2.95
+ALS	88.93 $\pm$ 1.31	80.31 $\pm$ 0.71	90.23 $\pm$ 0.50	89.14 $\pm$ 0.48	94.55 $\pm$ 0.53	67.79 $\pm$ 1.07	40.09$\pm$0.72	51.34 $\pm$ 1.00	92.95 $\pm$ 1.31	89.18 $\pm$ 2.13
+PosteL	89.20$\pm$1.07	81.21$\pm$0.64	90.57$\pm$0.31	89.84$\pm$0.43	94.76$\pm$0.38	68.38$\pm$1.12	40.08 $\pm$ 0.69	53.54$\pm$0.79	93.28$\pm$1.31	92.46$\pm$0.99
Δ	+0.63($\uparrow$)	+1.09($\uparrow$)	+2.11($\uparrow$)	+2.99($\uparrow$)	+0.91($\uparrow$)	+1.10($\uparrow$)	+0.16($\uparrow$)	+3.39($\uparrow$)	+0.33($\uparrow$)	+1.09($\uparrow$)
BernNet	88.52 $\pm$ 0.95	80.09 $\pm$ 0.79	88.48 $\pm$ 0.41	87.64 $\pm$ 0.44	93.63 $\pm$ 0.35	68.29 $\pm$ 1.58	41.79$\pm$1.01	51.35 $\pm$ 0.73	93.12 $\pm$ 0.65	92.13 $\pm$ 1.64
+SALS	88.77 $\pm$ 0.85	81.20 $\pm$ 0.61	88.61 $\pm$ 0.35	88.87 $\pm$ 0.33	94.22 $\pm$ 0.43	64.62 $\pm$ 0.85	40.15 $\pm$ 1.07	46.19 $\pm$ 0.78	85.90 $\pm$ 4.10	88.03 $\pm$ 3.12
+ALS	89.13 $\pm$ 0.79	81.17 $\pm$ 0.67	89.19$\pm$0.46	89.52 $\pm$ 0.30	94.54$\pm$0.32	67.92 $\pm$ 1.07	40.51 $\pm$ 0.61	51.83 $\pm$ 1.31	93.77 $\pm$ 1.31	92.79 $\pm$ 1.48
+PosteL	89.39$\pm$0.92	82.46$\pm$0.67	89.07 $\pm$ 0.29	89.56$\pm$0.35	94.54$\pm$0.36	69.65$\pm$0.83	40.40 $\pm$ 0.67	53.11$\pm$0.87	93.93$\pm$1.15	92.95$\pm$1.80
Δ	+0.87($\uparrow$)	+2.37($\uparrow$)	+0.59($\uparrow$)	+1.92($\uparrow$)	+0.91($\uparrow$)	+1.36($\uparrow$)	-1.39($\downarrow$)	+1.76($\uparrow$)	+0.81($\uparrow$)	+0.82($\uparrow$)

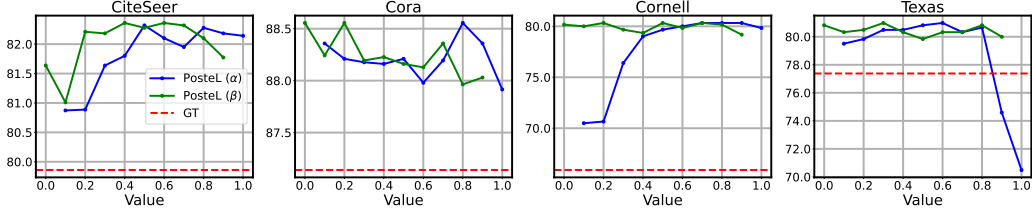


Figure 1: Hyperparameter sensitivity analysis on GCN for four datasets.

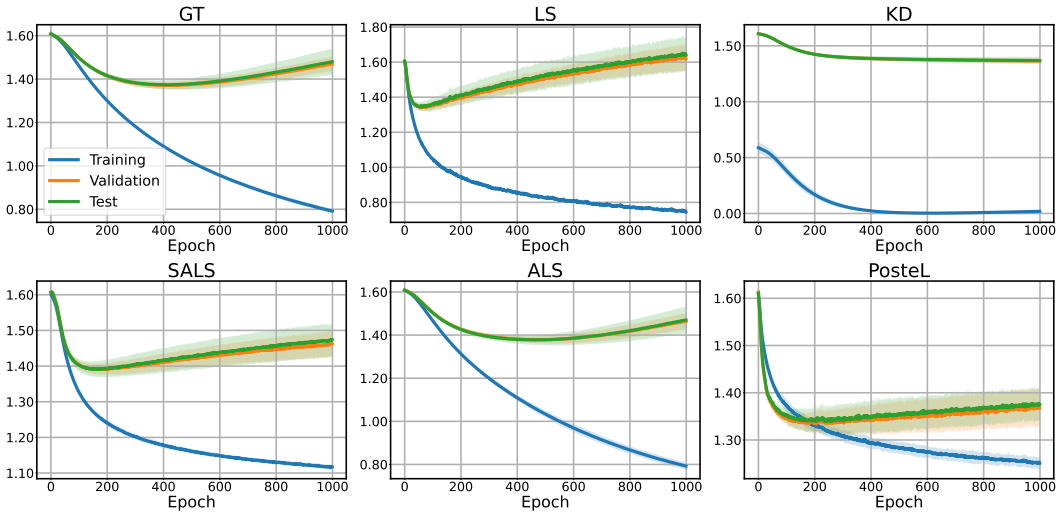


Figure 2: Loss curve of GCN trained on PosteL and baselines on the Squirrel dataset.