1 fb15k Evaluation

1.1 fb15k Average

1.1.1 fb15k Average Hits@K

	hits@1	hits@3	hits@5	hits@10
complex	10.06 ± 0.42	20.82 ± 0.67	27.59 ± 0.94	38.03 ± 1.02
conve	48.28 ± 0.12	66.99 ± 0.04	73.27 ± 0.03	79.76 ± 0.07
distmult	16.45 ± 0.16	29.10 ± 0.17	35.54 ± 0.21	45.00 ± 0.25
hole	21.79 ± 0.19	39.69 ± 0.24	48.06 ± 0.30	58.84 ± 0.28
kg2e	0.11 ± 0.04	0.36 ± 0.08	0.56 ± 0.10	1.01 ± 0.14
rotate	41.53 ± 0.06	64.14 ± 0.07	71.23 ± 0.05	78.67 ± 0.08
simple	0.01 ± 0.00	0.03 ± 0.00	0.04 ± 0.00	0.06 ± 0.01
transd	21.22 ± 0.03	40.48 ± 0.10	48.57 ± 0.09	58.71 ± 0.14
transe	15.23 ± 0.16	29.85 ± 0.24	37.18 ± 0.24	47.34 ± 0.18
transh	1.69 ± 0.25	2.95 ± 0.20	3.29 ± 0.22	3.74 ± 0.18
transr	0.37 ± 0.00	0.63 ± 0.04	0.78 ± 0.06	1.03 ± 0.07
tucker	0.01 ± 0.00	0.02 ± 0.00	0.03 ± 0.01	0.15 ± 0.17

1.1.2 fb15k Average Mean Ranks

	MR	MRR	AMR
complex	171.16 ± 16.05	19.13 ± 0.45	2.46 ± 0.28
conve	50.76 ± 0.40	59.56 ± 0.06	0.73 ± 0.01
distmult	134.02 ± 1.98	26.06 ± 0.17	1.86 ± 0.03
hole	193.03 ± 7.61	34.15 ± 0.22	2.71 ± 0.12
kg2e	5779.07 ± 51.02	0.58 ± 0.07	78.40 ± 0.68
rotate	42.28 ± 0.13	55.00 ± 0.06	0.63 ± 0.00
simple	7395.75 ± 2.02	0.04 ± 0.00	100.02 ± 0.03
transd	153.37 ± 5.35	33.99 ± 0.03	2.29 ± 0.09
transe	127.92 ± 0.86	26.01 ± 0.17	1.78 ± 0.01
transh	6320.02 ± 30.37	2.54 ± 0.20	85.63 ± 0.40
transr	6795.95 ± 16.65	0.65 ± 0.02	91.99 ± 0.22
tucker	7327.77 ± 29.22	0.07 ± 0.02	99.11 ± 0.39

1.2 fb15k Best

1.2.1 fb15k Best Hits@K

	hits@1	hits@3	hits@5	hits@10
complex	10.06 ± 0.42	20.82 ± 0.67	27.59 ± 0.94	38.03 ± 1.02
conve	48.28 ± 0.12	66.99 ± 0.04	73.27 ± 0.03	79.76 ± 0.07
distmult	16.45 ± 0.16	29.10 ± 0.17	35.54 ± 0.21	45.00 ± 0.25
hole	21.79 ± 0.19	39.69 ± 0.24	48.06 ± 0.30	58.84 ± 0.28
kg2e	0.11 ± 0.04	0.36 ± 0.08	0.56 ± 0.10	1.01 ± 0.14
rotate	41.53 ± 0.06	64.14 ± 0.07	71.23 ± 0.05	78.67 ± 0.08
simple	11.58 ± 6.42	24.16 ± 10.95	34.73 ± 13.40	54.28 ± 15.80
transd	21.22 ± 0.03	40.48 ± 0.10	48.57 ± 0.09	58.71 ± 0.14
transe	15.23 ± 0.16	29.85 ± 0.24	37.18 ± 0.24	47.34 ± 0.18
transh	1.69 ± 0.25	2.95 ± 0.20	3.29 ± 0.22	3.74 ± 0.18
transr	0.37 ± 0.00	0.63 ± 0.04	0.78 ± 0.06	1.03 ± 0.07
tucker	0.01 ± 0.00	0.02 ± 0.00	0.03 ± 0.01	0.15 ± 0.17

1.2.2 fb15k Best Mean Ranks

	MR	MRR
complex	171.16 ± 16.05	19.13 ± 0.45
conve	50.76 ± 0.40	59.56 ± 0.06
distmult	134.02 ± 1.98	26.06 ± 0.17
hole	193.03 ± 7.61	34.15 ± 0.22
kg2e	5779.07 ± 51.02	0.58 ± 0.07
rotate	42.28 ± 0.13	55.00 ± 0.06
simple	139.34 ± 49.45	23.90 ± 8.79
transd	153.37 ± 5.35	33.99 ± 0.03
transe	127.92 ± 0.86	26.01 ± 0.17
transh	6320.00 ± 30.37	2.54 ± 0.20
transr	6795.94 ± 16.65	0.65 ± 0.02
tucker	7327.77 ± 29.22	0.07 ± 0.02

1.3 fb15k Worst

1.3.1 fb15k Worst Hits@K

	hits@1	hits@3	hits@5	hits@10
complex	10.06 ± 0.42	20.82 ± 0.67	27.59 ± 0.94	38.03 ± 1.02
conve	48.28 ± 0.12	66.99 ± 0.04	73.27 ± 0.03	79.76 ± 0.07
distmult	16.45 ± 0.16	29.10 ± 0.17	35.54 ± 0.21	45.00 ± 0.25
hole	21.79 ± 0.19	39.69 ± 0.24	48.06 ± 0.30	58.84 ± 0.28
kg2e	0.11 ± 0.04	0.36 ± 0.08	0.56 ± 0.10	1.01 ± 0.14
rotate	41.53 ± 0.06	64.14 ± 0.07	71.23 ± 0.05	78.67 ± 0.08
simple	0.01 ± 0.00	0.03 ± 0.00	0.04 ± 0.00	0.06 ± 0.01
transd	21.22 ± 0.03	40.48 ± 0.10	48.57 ± 0.09	58.71 ± 0.14
transe	15.23 ± 0.16	29.85 ± 0.24	37.18 ± 0.24	47.34 ± 0.18
transh	1.69 ± 0.25	2.95 ± 0.20	3.29 ± 0.22	3.74 ± 0.18
transr	0.37 ± 0.00	0.63 ± 0.04	0.78 ± 0.06	1.03 ± 0.07
tucker	0.01 ± 0.00	0.02 ± 0.00	0.03 ± 0.01	0.15 ± 0.17

1.3.2 fb15k Worst Mean Ranks

	MR	MRR
complex	171.16 ± 16.05	19.13 ± 0.45
conve	50.76 ± 0.40	59.56 ± 0.06
distmult	134.02 ± 1.98	26.06 ± 0.17
hole	193.03 ± 7.61	34.15 ± 0.22
kg2e	5779.07 ± 51.02	0.58 ± 0.07
rotate	42.28 ± 0.13	55.00 ± 0.06
simple	14652.16 ± 45.71	0.03 ± 0.00
transd	153.37 ± 5.35	33.99 ± 0.03
transe	127.92 ± 0.86	26.01 ± 0.17
transh	6320.05 ± 30.37	2.54 ± 0.20
transr	6795.95 ± 16.65	0.65 ± 0.02
tucker	7327.77 ± 29.22	0.07 ± 0.02

2 wn18 Evaluation

2.1 wn18 Average

2.1.1 wn18 Average Hits@K

	hits@1	hits@3	hits@5	hits@10
complex	12.36 ± 1.96	20.66 ± 2.75	25.24 ± 3.33	32.92 ± 4.40
conve	85.14 ± 0.10	91.76 ± 0.11	93.29 ± 0.04	94.85 ± 0.06
distmult	67.45 ± 0.34	85.94 ± 0.21	89.52 ± 0.25	92.72 ± 0.18
hole	58.98 ± 0.72	79.19 ± 0.42	83.90 ± 0.37	88.57 ± 0.36
kg2e	1.35 ± 0.22	3.21 ± 0.31	4.57 ± 0.34	7.02 ± 0.43
rotate	82.17 ± 0.20	91.53 ± 0.12	93.44 ± 0.07	95.28 ± 0.08
simple	0.01 ± 0.01	0.03 ± 0.00	0.04 ± 0.01	0.07 ± 0.03
transd	3.94 ± 0.27	65.63 ± 0.55	79.64 ± 0.43	87.27 ± 0.41
transe	9.70 ± 2.93	59.83 ± 0.95	71.41 ± 0.71	81.22 ± 0.47
transh	0.04 ± 0.02	0.19 ± 0.10	0.29 ± 0.14	0.39 ± 0.11
transr	0.00 ± 0.00	0.04 ± 0.02	0.05 ± 0.03	0.11 ± 0.06
tucker	0.00 ± 0.00	0.02 ± 0.01	0.03 ± 0.03	0.04 ± 0.03

2.1.2 wn18 Average Mean Ranks

	MR	MRR	AMR
complex	452.67 ± 63.05	19.49 ± 2.55	2.21 ± 0.31
conve	444.40 ± 14.82	88.81 ± 0.09	2.17 ± 0.07
distmult	458.64 ± 23.96	77.44 ± 0.22	2.24 ± 0.12
hole	813.61 ± 55.99	70.21 ± 0.52	3.98 ± 0.27
kg2e	2708.89 ± 44.57	3.61 ± 0.26	13.25 ± 0.22
rotate	123.68 ± 1.71	87.29 ± 0.12	0.61 ± 0.01
simple	20376.43 ± 42.30	0.04 ± 0.01	99.57 ± 0.21
transd	444.39 ± 25.61	36.22 ± 0.12	2.17 ± 0.13
transe	502.96 ± 27.45	37.07 ± 1.84	2.46 ± 0.13
transh	19678.04 ± 18.92	0.18 ± 0.04	96.16 ± 0.09
transr	19686.49 ± 100.97	0.06 ± 0.02	96.20 ± 0.49
tucker	20622.46 ± 153.52	0.03 ± 0.01	100.78 ± 0.75

2.2 wn18 Best

2.2.1 wn18 Best Hits@K

	hits@1	hits@3	hits@5	hits@10
complex	12.36 ± 1.96	20.66 ± 2.75	25.24 ± 3.33	32.92 ± 4.40
conve	85.14 ± 0.10	91.76 ± 0.11	93.29 ± 0.04	94.85 ± 0.06
distmult	67.45 ± 0.34	85.94 ± 0.21	89.52 ± 0.25	92.72 ± 0.18
hole	58.98 ± 0.72	79.19 ± 0.42	83.90 ± 0.37	88.57 ± 0.36
kg2e	1.35 ± 0.22	3.21 ± 0.31	4.57 ± 0.34	7.02 ± 0.43
rotate	82.17 ± 0.20	91.53 ± 0.12	93.44 ± 0.07	95.28 ± 0.08
simple	33.93 ± 4.32	39.59 ± 4.67	42.76 ± 3.73	47.01 ± 2.66
transd	3.94 ± 0.27	65.63 ± 0.55	79.64 ± 0.43	87.27 ± 0.41
transe	9.70 ± 2.93	59.83 ± 0.95	71.41 ± 0.71	81.22 ± 0.47
transh	0.04 ± 0.02	0.19 ± 0.10	0.29 ± 0.14	0.39 ± 0.11
transr	0.00 ± 0.00	0.04 ± 0.02	0.05 ± 0.03	0.11 ± 0.06
tucker	0.00 ± 0.00	0.02 ± 0.01	0.03 ± 0.03	0.04 ± 0.03

2.2.2 wn18 Best Mean Ranks

	MR	MRR
complex	452.67 ± 63.05	19.49 ± 2.55
conve	444.40 ± 14.82	88.81 ± 0.09
distmult	458.64 ± 23.96	77.44 ± 0.22
hole	813.61 ± 55.99	70.21 ± 0.52
kg2e	2708.88 ± 44.57	3.61 ± 0.26
rotate	123.68 ± 1.71	87.29 ± 0.12
simple	384.53 ± 66.45	38.48 ± 4.00
transd	444.39 ± 25.61	36.22 ± 0.12
transe	502.95 ± 27.45	37.07 ± 1.84
transh	19678.02 ± 18.92	0.18 ± 0.04
transr	19686.49 ± 100.97	0.06 ± 0.02
tucker	20622.46 ± 153.52	0.03 ± 0.01

2.3 wn18 Worst

2.3.1 wn18 Worst Hits@K

	hits@1	hits@3	hits@5	hits@10
complex	12.36 ± 1.96	20.66 ± 2.75	25.24 ± 3.33	32.92 ± 4.40
conve	85.14 ± 0.10	91.76 ± 0.11	93.29 ± 0.04	94.85 ± 0.06
distmult	67.45 ± 0.34	85.94 ± 0.21	89.52 ± 0.25	92.72 ± 0.18
hole	58.98 ± 0.72	79.19 ± 0.42	83.90 ± 0.37	88.57 ± 0.36
kg2e	1.35 ± 0.22	3.21 ± 0.31	4.57 ± 0.34	7.02 ± 0.43
rotate	82.17 ± 0.20	91.53 ± 0.12	93.44 ± 0.07	95.28 ± 0.08
simple	0.01 ± 0.01	0.03 ± 0.00	0.04 ± 0.01	0.07 ± 0.03
transd	3.94 ± 0.27	65.63 ± 0.55	79.64 ± 0.43	87.27 ± 0.41
transe	9.70 ± 2.93	59.83 ± 0.95	71.41 ± 0.71	81.22 ± 0.47
transh	0.04 ± 0.02	0.19 ± 0.10	0.29 ± 0.14	0.39 ± 0.11
transr	0.00 ± 0.00	0.04 ± 0.02	0.05 ± 0.03	0.11 ± 0.06
tucker	0.00 ± 0.00	0.02 ± 0.01	0.03 ± 0.03	0.04 ± 0.03

2.3.2 wn18 Worst Mean Ranks

	MR	MRR
complex	452.67 ± 63.05	19.49 ± 2.55
conve	444.40 ± 14.82	88.81 ± 0.09
distmult	458.64 ± 23.96	77.44 ± 0.22
hole	813.61 ± 55.99	70.21 ± 0.52
kg2e	2708.89 ± 44.57	3.61 ± 0.26
rotate	123.68 ± 1.71	87.29 ± 0.12
simple	40368.33 ± 114.95	0.03 ± 0.01
transd	444.39 ± 25.61	36.22 ± 0.12
transe	502.96 ± 27.45	37.07 ± 1.84
transh	19678.06 ± 18.92	0.18 ± 0.04
transr	19686.50 ± 100.97	0.06 ± 0.02
tucker	20622.46 ± 153.52	0.03 ± 0.01