
Deep Transfer via Second-Order Markov Logic

1. Results

This document includes the complete set of tables for both exhaustive and greedy search. Some of these tables were omitted from the ICML paper due to space limitations.

Table 1 compares the performance, measured by average relative difference (e.g., $(AUC_{DTM} - AUC_{MSL})/AUC_{MSL}$) of DTM using greedy transfer with refinement to MSL when transferring cliques of up to length three. Table 2 compares the performance, measured by average relative difference, using greedy transfer with refinement to MSL when transferring cliques of up to length four. Table 3 compares the performance, measured by average relative difference, using greedy transfer with refinement to MSL when transferring cliques found by beam search. Note, that when using Facebook as the source domain, beam search only generated 5 potential second-order cliques for transfer.

Table 4 compares the performance of DTM using greedy transfer with refinement to MSL, measured by average relative difference, for WebKB when transferring cliques of up to length three. Table 5 compares the performance of DTM using greedy transfer with refinement to MSL, measured by average relative difference, for WebKB when transferring cliques of up to length four. Table 6 compares the performance, measured by average relative difference, using greedy transfer with refinement to MSL when transferring cliques found by beam search. Note, that when using Facebook as the source domain, beam search only generated 5 potential second-order cliques for transfer.

Table 1. Experimental results comparing DTM (greedy transfer with refinement) to MSL on the Yeast domain. Each entry in the table is the average relative difference in AUC or CLL between transfer and MSL when considering second-order cliques that contain up to three predicate and object variables.

Source	No. Cliques	AUC						CLL					
		Function			Interaction			Function			Interaction		
		1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB
WebKB	5	0.48	0.70	0.30	-0.31	-0.33	-0.21	0.12	0.17	0.03	0.01	0.03	-0.02
FB	5	0.29	0.13	-0.22	0.00	0.56	-0.26	0.02	-0.10	-0.23	0.00	0.06	-0.14
WebKB	10	0.47	0.52	0.21	-0.18	-0.32	-0.07	0.12	0.10	0.05	0.04	0.02	0.01
FB	10	0.63	0.51	0.10	-0.35	-0.03	-0.42	0.18	0.01	-0.16	0.01	0.07	-0.01

Table 2. Experimental results comparing DTM (greedy transfer with refinement) to MSL on the Yeast domain. Each entry in the table is the average relative difference in AUC or CLL between transfer and MSL when considering second-order cliques that contain up to four predicate and object variables.

Source	No. Cliques	AUC						CLL					
		Function			Interaction			Function			Interaction		
		1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB
WebKB	5	0.18	0.16	-0.10	0.04	-0.03	-0.02	0.02	0.03	-0.05	0.01	0.02	0.00
FB	5	0.24	0.20	-0.16	0.00	0.55	-0.18	0.02	-0.07	-0.17	0.00	0.05	-0.04
WebKB	10	0.27	0.53	0.41	-0.34	-0.26	-0.24	0.05	0.00	0.01	-0.01	0.02	-0.03
FB	10	-0.26	-0.04	-0.45	-0.41	-0.06	-0.21	-0.17	-0.14	-0.25	-0.51	-0.47	-0.04

Table 3. Experimental results comparing DTM (greedy transfer with refinement) to MSL on the Yeast domain. Each entry in the table is the average relative difference in AUC or CLL between transfer and MSL when considering second-order cliques discovered by beam search.

Source	No. Cliques	AUC						CLL					
		Function			Interaction			Function			Interaction		
		1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB
WebKB	5	0.24	0.20	-0.10	0.00	0.56	-0.03	0.02	-0.01	-0.06	0.00	0.05	0.00
FB	5	0.23	-0.47	-0.41	0.00	-0.50	-0.43	0.03	-0.65	-0.68	-0.02	-1.19	-0.23
WebKB	10	0.24	0.20	-0.14	0.00	-0.01	0.00	0.02	0.02	-0.07	0.00	-0.02	-0.01

Table 4. Experimental results comparing DTM (greedy transfer with refinement) to MSL on the WebKB domain. Each entry in the table is the average relative difference in AUC or CLL between transfer and MSL when considering second-order cliques that contain up to three predicate and object variables.

Source	No. Cliques	AUC						CLL					
		Page Class			Linked			Page Class			Linked		
		1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB
Yeast	5	-0.01	0.02	0.00	42.79	9.77	11.03	-0.12	0.04	0.03	0.12	0.04	0.19
FB	5	0.00	0.01	0.01	40.79	4.64	6.15	-0.06	0.02	0.07	0.12	0.04	0.19
Yeast	10	-0.01	0.02	-0.01	42.79	10.36	10.94	-0.12	0.03	0.00	0.12	0.04	0.19
FB	10	0.00	0.01	0.01	40.79	4.64	6.15	-0.06	0.02	0.07	0.12	0.04	0.19

Table 5. Experimental results comparing DTM (greedy transfer with refinement) to MSL on the WebKB domain. Each entry in the table is the average relative difference in AUC or CLL between transfer and MSL when considering second-order cliques that contain up to four predicate and object variables.

Source	No. Cliques	AUC						CLL					
		Page Class			Linked			Page Class			Linked		
		1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB
Yeast	5	-0.08	0.00	-0.01	1.80	0.75	7.70	-0.96	-0.11	-0.04	0.00	-0.05	0.19
FB	5	-0.01	0.02	-0.00	40.65	9.77	11.03	-0.19	0.04	0.02	0.12	0.04	0.21
Yeast	10	-0.04	0.01	-0.01	16.61	9.29	10.85	-0.16	-0.04	-0.06	0.06	0.00	0.19
FB	10	-0.08	-0.03	0.01	32.60	10.48	11.06	-0.61	-0.34	0.06	0.12	0.04	0.21

Table 6. Experimental results comparing DTM (greedy transfer with refinement) to MSL on the WebKB domain. Each entry in the table is the average relative difference in AUC or CLL between transfer and MSL when considering second-order cliques found by beam search.

Source	No. Cliques	AUC						CLL					
		Page Class			Linked			Page Class			Linked		
		1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB	1 DB	2 DB	3 DB
Yeast	5	-0.08	-0.03	0.01	40.79	10.48	10.93	-0.54	-0.34	0.05	0.12	0.04	0.19
FB	5	0.01	-0.04	0.01	26.27	-0.66	0.91	0.06	-0.09	0.04	0.06	-0.14	0.03
Yeast	10	-0.08	-0.04	0.00	40.79	10.48	11.04	-0.54	-0.36	-0.01	0.12	0.04	0.19