

Table 1: Results obtained by integrating understandability estimations within retrieval methods on CLEF 2016. Baseline runs are reported at table indices 1-3 (the index column is labelled Idx). Re-ranking experiments are reported at indices 4-21. Fusion experiments are reported at indices 22-30. Learning to rank experiments are reported at indices 31-35. All measures were calculated up to rank $n = 10$. P-values are rounded to the third decimal digit and reported w.r.t ECNU run (P_e) and the BM25 baseline (P_{bl}). The highest result of each set of experiments is reported in bold face.

Idx	Rerank	Run	Official CLEF 2015 Measures						New Measures to Evaluate Understandability in Retrieval																			
			RRP	P_d	P_e	Res.	uRRP	P_d	P_e	Res.	RRP	P_d	P_e	Res.	H_{top}	P_d	P_e	Res.	Unj	RRP	P_d	P_e	RRP	P_d	P_e	H_{top}	P_d	P_e
1	No Rerank	ECNU (Best Run)	51.57	-	-	8.95	50.51	-	-	8.95	59.55	-	-	10.09	46.22	-	-	8.62	00	51.57	-	-	59.55	-	-	46.22	-	-
2		KISTI (2nd Best)	36.72	-	036	8.06	35.92	-	035	7.32	64.50	-	237	11.54	37.56	-	028	7.89	03	37.07	-	049	65.31	-	156	37.96	-	037
3		Plain BM25 Baseline	31.20	-	000	8.76	30.51	-	000	7.65	67.60	-	066	12.20	35.75	-	009	8.76	03	31.57	-	000	68.94	-	0021	36.42	-	015
4	SMOG	Based on ECNU	38.16	000	000	20.09	37.36	000	000	8.95	55.11	013	013	22.14	37.59	000	000	18.98	14	45.45	005	005	62.58	161	161	43.65	167	167
5		Based on KISTI	31.28	005	000	10.21	30.59	005	000	7.48	67.05	260	126	13.95	34.23	132	001	10.05	05	33.12	020	000	69.10	085	037	36.02	337	008
6	SMOG	Based on BM25	24.39	001	000	11.46	23.83	001	000	7.16	67.69	962	104	17.66	28.97	000	000	11.46	10	26.28	005	000	72.82	018	001	31.53	008	001
7		Based on ECNU	33.88	000	000	25.96	50.13	000	000	8.95	54.15	025	025	27.91	35.34	000	000	25.02	20	34.57	004	004	66.20	065	005	44.88	519	519
8	SMOG	Based on KISTI	28.01	002	000	11.05	27.39	002	000	7.32	66.61	356	170	15.44	30.93	009	000	10.82	08	30.87	015	000	69.99	031	018	33.81	074	002
9		Based on BM25	22.83	000	000	13.48	22.31	000	000	7.32	63.61	065	546	22.44	26.52	000	000	13.48	15	26.22	005	000	72.72	018	000	30.87	008	000
10	SMOG	Based on ECNU	21.83	000	000	16.62	21.34	000	000	8.95	41.71	000	000	48.89	23.05	000	000	16.62	14	36.88	000	000	71.61	001	001	31.86	278	278
11		Based on KISTI	21.00	000	000	18.67	20.53	000	000	7.32	59.72	076	523	26.67	24.88	000	000	18.67	23	27.20	002	000	72.47	004	004	31.90	041	000
12	SMOG	Based on BM25	15.20	000	000	18.73	14.86	000	000	6.51	49.87	000	005	36.41	17.79	000	000	18.73	32	21.22	002	000	73.17	069	001	25.78	000	000
13		Based on ECNU	50.97	000	000	21.50	50.96	000	000	9.01	54.64	021	021	23.82	40.35	000	000	20.92	15	27.08	004	004	74.58	004	004	33.22	535	535
14	XGB	Based on KISTI	31.36	017	000	8.95	30.63	016	000	6.83	68.63	065	042	13.63	33.78	055	001	8.78	05	32.80	043	001	70.87	010	010	35.24	144	005
15		Based on BM25	23.38	001	000	11.36	22.84	001	000	7.16	66.79	700	194	19.43	27.60	000	000	11.36	10	26.35	007	000	73.48	009	001	31.35	003	000
16	XGB	Based on ECNU	24.91	000	000	27.19	51.12	000	000	9.01	52.69	010	010	30.19	34.99	000	000	23.95	25	26.71	003	003	63.56	001	001	48.81	305	305
17		Based on KISTI	29.04	017	000	10.10	28.35	017	000	6.51	69.10	073	033	15.86	32.00	022	000	9.94	07	31.82	086	000	73.19	000	001	34.84	134	004
18	XGB	Based on BM25	21.83	001	000	12.88	21.32	001	000	6.51	64.16	167	530	25.29	25.47	000	000	12.88	16	26.56	023	000	76.26	000	000	31.45	026	001
19		Based on ECNU	25.75	000	000	13.65	23.27	000	000	8.95	41.56	007	000	48.18	24.90	000	000	13.65	46	36.69	006	000	73.39	000	000	34.66	321	321
20	XGB	Based on KISTI	18.69	001	000	17.21	18.25	001	000	6.67	56.87	032	255	33.37	21.82	000	000	17.21	29	27.69	007	000	76.44	000	000	44.65	421	066
21		Based on BM25	17.47	004	000	20.95	17.00	004	000	6.02	47.21	000	003	43.81	19.22	000	000	2.98	41	27.09	463	000	79.77	000	000	31.35	090	001
22	RRF (XGB & Orig.)	Based on ECNU	47.81	002	002	12.85	46.78	001	001	8.95	60.04	746	746	15.04	44.69	198	008	12.34	10	50.09	157	157	62.98	001	001	36.85	539	531
23		Based on KISTI	33.78	033	002	7.71	33.02	032	002	6.83	68.57	006	023	12.02	35.72	096	005	7.55	03	34.34	038	004	69.67	002	011	36.26	105	010
24	RRF (XGB & Orig.)	Based on BM25	26.85	000	000	12.13	26.23	000	000	7.48	66.64	464	166	15.98	31.52	000	000	12.13	07	28.35	004	000	70.65	144	005	33.70	007	002
25		Based on ECNU	45.49	000	000	15.16	45.58	000	000	9.01	59.95	381	381	13.12	43.69	074	074	14.54	12	36.95	053	053	74.50	000	000	47.01	543	543
26	RRF (XGB & Orig.)	Based on KISTI	32.72	011	000	8.45	31.97	011	000	7.00	69.06	007	020	12.77	35.14	070	003	8.28	04	33.83	028	002	70.83	001	005	36.29	173	011
27		Based on BM25	25.64	000	000	12.51	25.05	000	000	7.16	66.55	434	174	17.31	30.14	000	000	12.51	09	27.64	002	000	71.79	017	002	32.96	011	002
28	RRF (XGB & Orig.)	Based on ECNU	38.97	000	000	21.40	50.06	000	000	8.95	57.57	272	272	25.44	36.54	002	002	19.83	24	37.08	010	010	67.85	000	000	47.12	515	515
29		Based on KISTI	27.78	001	000	11.24	27.13	001	000	6.83	67.83	188	089	16.75	31.07	006	000	11.24	09	31.33	007	000	73.06	000	001	34.85	089	003
30		Based on BM25	19.28	000	000	17.11	18.86	000	000	7.00	57.40	001	169	27.02	22.78	000	000	17.11	19	25.06	000	000	71.56	181	008	30.26	003	000
31	XGB LeToR	LTR 1 on BM25	24.86	003	000	17.39	24.32	003	000	7.81	55.60	000	048	24.11	28.89	002	000	17.39	22	29.67	247	000	66.41	332	155	34.76	316	001
32		LTR 2 on BM25	30.72	880	000	21.25	30.08	868	000	8.46	48.87	000	000	28.82	31.76	096	000	18.99	26	37.09	065	000	61.89	004	824	39.17	265	023
33		LTR 3 on BM25	28.92	186	000	24.35	28.32	190	000	8.46	49.02	000	000	32.11	30.14	033	000	23.83	31	37.32	199	000	63.86	015	576	39.84	234	039
34		LTR 4 on BM25	25.65	004	000	25.72	25.09	004	000	8.30	49.00	000	001	33.39	27.45	000	000	24.40	33	35.82	190	000	66.14	313	163	38.21	577	011
35		LTR 5 on BM25	30.21	554	000	20.79	29.59	567	000	8.62	48.47	000	000	27.88	30.95	039	000	19.99	25	37.11	055	000	61.25	006	888	39.15	169	040