SHORT QUERIES Performance Comparison

Evaluation metric	Your algorithm	Vector Space Model	BM25	Language Model with Dirichlet Smoothing	Language Model with Jelinek Mercer Smoothing
num_q	1	1	1	1	1
num_ret	955	1000	1000	1000	1000
num_rel	31	31	31	31	31
num_rel_ret	3	19	19	19	18
map	0.0003	0.1833	0.1894	0.1833	0.1462
gm_map	0.0003	0.1833	0.1894	0.1833	0.1462
Rprec	0	0.2581	0.2258	0.2581	0.1935
bpref	0.0852	0.4748	0.4684	0.4748	0.4426
recip_rank	0.0018	1	1	1	1
iprec_at_recall_0.00	0.0044	1	1	1	1
iprec_at_recall_0.10	0.375	0.625	0.7143	0.625	0.5
iprec_at_recall_0.20	0.24	0.4	0.2414	0.4	0.1795
iprec_at_recall_0.50	0.0261	0.0436	0.0464	0.0436	0.0196
iprec_at_recall_0.60	0.0147	0.0246	0.0213	0.0246	0
P_5	0.113	0.4	0.6	0.4	0.4
P_10	0.12	0.5	0.5	0.5	0.5
P_15	0.109	0.4	0.3333	0.4	0.3333
P_20	0.1138	0.4	0.3	0.4	0.25
P_30	0.0915	0.2667	0.2333	0.2667	0.2
P_100	0.0715	0.09	0.1	0.09	0.1
P_200	0.037	0.055	0.055	0.055	0.05
P_500	0.015	0.036	0.036	0.036	0.024
P_1000	0.003	0.019	0.019	0.019	0.018

LONG QUERIES Performance Comparison

Evaluation metric	Your algorithm	Vector Space Model	BM25	Language Model with Dirichlet Smoothing	Language Model with Jelinek Mercer Smoothing
num_q	1	1	1	1	1
num_ret	955	1000	1000	1000	1000
num_rel	31	31	31	31	31
num_rel_ret	3	18	19	18	17
map	0.0003	0.1403	0.1315	0.1403	0.1068
gm_map	0.0003	0.1403	0.1315	0.1403	0.1068
Rprec	0	0.2258	0.2258	0.2258	0.2258
bpref	0.0852	0.5419	0.5613	0.5419	0.5071
recip_rank	0.0018	0.3333	0.5	0.3333	0.3333
iprec_at_recall_0.00	0.0044	0.6667	0.6667	0.6667	0.5
iprec_at_recall_0.10	0.375	0.6667	0.4167	0.6667	0.3571
iprec_at_recall_0.20	0.24	0.25	0.25	0.25	0.2593
iprec_at_recall_0.50	0.0261	0.0352	0.0412	0.0352	0.0344
iprec_at_recall_0.60	0.0147	0	0.0275	0	0
P_5	0.101	0.6	0.6	0.6	0.4
P_10	0.111	0.5	0.4	0.5	0.3
P_15	0.0909	0.3333	0.3333	0.3333	0.3333
P_20	0.1065	0.3	0.3	0.3	0.3
P_30	0.0875	0.2333	0.2333	0.2333	0.2333
P_100	0.0675	0.12	0.1	0.12	0.11
P_200	0.025	0.065	0.065	0.065	0.055
P_500	0.011	0.032	0.032	0.032	0.032
P_1000	0.003	0.018	0.019	0.018	0.017

Summary:

From the set of results above, we can observe that the precision for BM25 Language model for Long Queries is better than the rest and my implementation of search algorithm performed poorly. As far as short queries are concerned, all the algorithms performed relatively similar while Dirchlet Language model has a slight lead at Higher Recall Values. Again my implementation of search algorithm performed poorly. Smoothing seems to be correlated with the query type.