Short Query

Evaluation metric	Your algorithm	Vector Space Model	BM25	Language Model with Dirichlet Smoothing	Language Model with Jelinek Mercer Smoothing
P@5	0.4	0.4	0.6	0.6	0.4
P@10	0.4	0.5	0.5	0.5	0.5
P@20	0.3	0.4	0.3	0.35	0.25
P@100	0.11	0.09	0.1	0.09	0.1
Recall@5	0.0645	0.0645	0.097	0.0968	0.0645
Recall@10	0.129	0.1613	0.161	0.1613	0.1613
Recall@20	0.1935	0.2581	0.194	0.2258	0.1613
Recall@100	0.3548	0.2903	0.323	0.2903	0.3226
MAP	0.1291	0.1833	0.189	0.1404	0.1462
MRR	0.333	1	1	0.5	1
NDCG@5	0.3008	0.5531	0.723	0.4913	0.5531
NDCG@10	0.3372	0.5801	0.621	0.4666	0.5704
NDCG@20	0.292	0.4786	0.434	0.3704	0.3681
NDCG@100	0.3155	0.3804	0.404	0.318	0.3726

Long Query

Evaluation metric	Your algorithm	Vector Space Model	BM25	Language Model with Dirichlet Smoothing	Language Model with Jelinek Mercer Smoothing
P@5	0	0.6	0.6	0.4	0.6
P@10	0.1	0.5	0.5	0.3	0.4
P@20	0.15	0.3	0.3	0.3	0.3
P@100	0.05	0.09	0.09	0.1	0.09
Recall@5	0	0.0968	0.0968	0.0645	0.0968
Recall@10	0.0323	0.1613	0.1613	0.0968	0.129
Recall@20	0.0968	0.1935	0.1935	0.1935	0.1935
Recall@100	0.1613	0.2903	0.2903	0.3226	0.2903
MAP	0.0269	0.1486	0.1777	0.0919	0.1629
MRR	0.1429	1	1	0.25	1
NDCG@5	0	0.6399	0.7227	0.2773	0.7227
NDCG@10	0.0734	0.551	0.5989	0.2583	0.5424
NDCG@20	0.1125	0.3903	0.4261	0.269	0.4187
NDCG@100	0.1227	0.3493	0.3792	0.2763	0.3712

Summary:

1. Ranking based on My Algorithm for long queries cannot be compared with the other algorithms, as my algorithm gives low precision whereas.
2. But, in case of Short queries (Title as the query) I am getting decent values in comparison with Long queries. It is very important to consider the relation between the consecutive terms and we need to perform smoothing.
3. For short as well as long queries, BM25 is the best model. BM25 improves upon TF*IDF. BM25 stands for “Best Match 25”. It’s the 25th iteration of tweaking the relevance computation.
4. **BM25 Analysis**: BM25’s IDF has the potential for giving negative scores for terms with very high document frequency. So, they add 1 to the value, before taking the log, which makes it impossible to compute a negative value.