

Your Name:

Your Andrew ID:

Homework 4

0 Introduction

0.1 Collaboration and Originality

1. Did you receive help of any kind from anyone (other than the instructor or TAs) in developing your software for this assignment (Yes or No)? If you answered Yes, provide the name(s) of anyone who provided help, and describe the type of help that you received.
2. Did you give help of any kind to anyone in developing their software for this assignment (Yes or No)? If you answered Yes, provide the name(s) of anyone that you helped, and describe the type of help that you provided.
3. Did you examine anyone else's software for this assignment (Yes or No)? Do not describe software provided by the instructor.
4. Are you (or the course instructor) the author of every line of source code submitted for this assignment (Yes or No)? If you answered No:
 - a. identify the software that you did not write,
 - b. explain where it came from, and
 - c. explain why you used it.
5. Are you the author of every word of your report (Yes or No)? If you answered No:
 - a. identify the text that you did not write,
 - b. explain where it came from, and
 - c. explain why you used it.

0.2 Instructions

You must analyze the experimental results. Don't just summarize the numbers contained in the table – we can read the table ourselves. Instead, explain what conclusions you can reach based on the experiment. You could discuss how one algorithm compares with the other; stability of results across different parameter settings; effects on Precision or Recall; accuracy vs. computational effort; or other aspects of the experimental results that interest you. You may find it helpful to provide information about a few example queries to make your points, for example queries that had the most dramatic change in performance (good or bad) from diversification, but do not provide information about every query individually. We are primarily interested in your observations about general trends, not quirky queries. Usually a good analysis addresses several issues. Show that you understand what the results mean, based upon what we have discussed in class.

Please leave the page breaks between sections, as shown in this file. We hope that this will reduce the number of duplicate pages in your graded report.

Instructions are shown in a red italic bold font. Do not include instructions in your report. For example, delete this page. There is a 2 point deduction for leaving instructions in your report (because it creates extra work for the TAs).

1 Diversity and Relevance Baselines

1.1 Experimental Results for Diversity and Relevance Baselines

Provide information about the effectiveness of your system in six configurations.

Your .zip / .tgz file must include files named HW4-Exp-1.1a.qry, HW4-Exp-1.1a.param, etc., in the QryEval directory. The experimental results shown above must be reproducible by these files and the parameter values shown in the table.

	Indri (Exp-1.1a)	Indri + PM2 (Exp-1.1b)	Indri + xQuAD (Exp-1.1c)	BM25 (Exp-1.1d)	BM25+ PM2 (Exp-1.1e)	BM25+ xQuAD (Exp-1.1f)
P-IA@10	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
P-IA@20						
αNDCG@20						
P@10						
P@20						
MAP						

1.2 Parameters for Diversity and Relevance Baselines

Document the BM25 and Indri parameter settings that were used to obtain these results.

1.3 Discussion for Diversity and Relevance Baselines

Analyze the experimental results.

2 Effect of λ

2.1 Experimental Results for Effect of λ

Provide information about the effectiveness of your system when λ is varied.

Your .zip / .tgz file must include files named HW4-Exp-2.1a.qry, HW4-Exp-2.1a.param, etc., in the QryEval directory. The experimental results shown above must be reproducible by these files and the parameter values shown in the table.

Indri + PM2				
	$\lambda=0.0$ (Exp-2.1a)	$\lambda=0.33$ (Exp-2.1b)	$\lambda=0.67$ (Exp-2.1c)	$\lambda=1.0$ (Exp-2.1d)
P-IA@10	0.00000	0.00000	0.00000	0.00000
P-IA@20				
α NDCG@20				
P@10				
P@20				
MAP				
Indri + xQuAD				
	$\lambda=0.0$ (Exp-2.2a)	$\lambda=0.33$ (Exp-2.2b)	$\lambda=0.67$ (Exp-2.2c)	$\lambda=1.0$ (Exp-2.2d)
P-IA@10	0.00000	0.00000	0.00000	0.00000
P-IA@20				
α NDCG@20				
P@10				
P@20				
MAP				

BM25 + PM2				
	$\lambda=0.0$ (Exp-2.3a)	$\lambda=0.33$ (Exp-2.3b)	$\lambda=0.67$ (Exp-2.3c)	$\lambda=1.0$ (Exp-2.3d)
P-IA@10	0.00000	0.00000	0.00000	0.00000
P-IA@20				
α NDCG@20				
P@10				
P@20				
MAP				
BM25 + xQuAD				
	$\lambda=0.0$ (Exp-2.4a)	$\lambda=0.33$ (Exp-2.4b)	$\lambda=0.67$ (Exp-2.4c)	$\lambda=1.0$ (Exp-2.4d)
P-IA@10	0.00000	0.00000	0.00000	0.00000
P-IA@20				
α NDCG@20				
P@10				
P@20				
MAP				

2.2 Parameters for Effect of λ

Document the BM25 and Indri parameter settings that were used to obtain these results.

2.3 Discussion for Effect of λ

Analyze the experimental results.

3 Effect of the Re-Ranking Depth

3.1 Experimental Results for the Effect of the Re-Ranking Depth

Provide information about the effectiveness of your system when the number of documents is varied.

Your .zip / .tgz file must include files named HW4-Exp-3.1a.qry, HW4-Exp-3.1a.param, etc., in the QryEval directory. The experimental results shown above must be reproducible by these files and the parameter values shown in the table.

Indri + PM2				
	Depth= (Exp-3.1a)	Depth= (Exp-3.1b)	Depth= (Exp-3.1c)	Depth= (Exp-3.1d)
P-IA@10	0.00000	0.00000	0.00000	0.00000
P-IA@20				
α NDCG@20				
P@10				
P@20				
MAP				

BM25 + PM2				
	Depth= (Exp-3.2a)	Depth= (Exp-3.2b)	Depth= (Exp-3.2c)	Depth= (Exp-3.2d)
P-IA@10	0.00000	0.00000	0.00000	0.00000
P-IA@20				
α NDCG@20				
P@10				
P@20				
MAP				
BM25 + xQuAD				
	Depth= (Exp-3.3a)	Depth= (Exp-3.3b)	Depth= (Exp-3.3c)	Depth= (Exp-3.3d)
P-IA@10	0.00000	0.00000	0.00000	0.00000
P-IA@20				
α NDCG@20				
P@10				
P@20				
MAP				

3.2 Parameters for the Effect of the Re-Ranking Depth

Document the Indri, BM25, and λ parameter settings that were used to obtain these results.

3.3 Discussion for the Effect of the Re-Ranking Depth

Analyze the experimental results.