UNIVERSITÉ Grenoble Alpes

Projet Master 1 WIC

Titre du sujet: Analysis of Information Retrieval Longitudinal Evaluation Collection (AIRLEC)

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1. Présentation du sujet

Context and Problem

A fundamental concern in the field of Information Retrieval (IR) is evaluation. Such evaluation aims at comparing systems to find which ones are the best.

Since the 1970s, the main method of evaluation of IR systems still depends on the "Cranfield paradigm" [3]. This paradigm defines one test collections as a triplet composed of: a set of documents (corpus), a set of queries, and the judgments of relevance of the documents to these queries (assessments). Queries are classically chosen and written by experts, and relevance judgments are also evaluated by experts. The evaluation of an IR system runs consists then of submitting a set of queries to the tested IR system and then comparing the results returned according with the judgment of the experts acting as the ground truth.

In the context of longitudinal analysis, test collections like LongEval [1, 3] are provided : they are composed of a sequence of test collections, corresponding to several “epochs”

Approach and Objectives

The problem that we want to tackle in this project is to be able to propose a set of processes that are able to compute many different features that compare the epochs:

1. We need an extensible framework that is able to compute differences between epochs of test collections (i.e. documents overlaps at different level of detail, queries overlaps at different levels of details, …). At a fisrt stage, simple comparisons will be achieved, but one important element is that the work proposed must be easily extensible, this means that the coding language choice and the data structures must be classical according to the common usages of the information retrieval community.
2. We need in a second step an interface able to display the features computed in step 1, in a graphical way.

All the tests and experiments one will be achieved on existing information retrieval test collections acquired for LongEval 2023 and 2024 [3].

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2. Références

[1] G. Gonzalez-Saez, P. Galuščáková, R. Deveaud, L. Goeuriot, and P. Mulhem. Exploratory visualization tool for the continuous evaluation of information retrieval systems. In ACM SIGIR 2023, July 2023.

[2] D. Harman. 2010. Is the cranfield paradigm outdated? ACM SIGIR '10. Keynote.

[3] Longeval CLEF 2023 Lab, https://clef-longeval.github.io/

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3. Positionnement du sujet

- Indiquez le niveau d'innovation du sujet proposé

Très innovant	❒	❒	☒	❒	❒	Classique

- Indiquez la disponibilité de la documentation relative aux technologies à mettre en œuvre

Beaucoup	❒	❒	☒	❒	❒	Aucune

- Indiquez le niveau d'abstraction du sujet

Théorique	❒	❒	❒	☒	❒	Pratique

- Indiquez la quantité de développement à réaliser

Beaucoup	❒	❒	☒	❒	❒	Peu

- Indiquez le niveau de difficulté des algorithmes à mettre en œuvre

Difficile	❒	❒	❒	☒	❒	Facile

- Indiquez le niveau d'interaction avec d'autres composants logiciels

Ecosystème complexe	❒	❒	❒	❒	☒	Application seule

- Indiquez le nombre d'étudiants souhaités pour le projet :2

- Indiquez les langages et technologies à utiliser:
On vise une interface basée sur des technologies Web, comme le prototype existant : python, framework Web comme Django, affichage de graphiques avec interaction, utilisation de bases de données (à définir).

4. Encadrement

- Combien de temps pouvez-vous consacrer à l'encadrement de projets chaque semaine ?
1h30

- Indiquez vos contraintes quant à l'encadrement
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- Indiquez vos contraintes quant au sujet proposé
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A retourner à :
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