Chapter 6

Enhancing Academic Recommendation Regarding Common Coauthors' Publication Records

ABSTRACT

In this chapter, the authors investigated the feasibility of any improvement in paper recommendation by recommending similar papers to an input paper from the publication record of the first author. Although there are numerous approaches for recommending academic papers, they did not consider intellectually recommending papers based on the publication record of common coauthors. Consequently, they are motivated to introduce a remedy for this shortcoming by recommending scholarly papers based on similarity of textual references to visual features which considers the similarity of text fragments of one's publication record to any of their visual features (i.e., tables and figures). Based on the results of evaluation, the proposed enhancement will increase the mean precision, recall, and accordingly, the F-measure. In addition, it increases the position of the relevant papers in the returned list of documents.

INTRODUCTION

The growing amount of researching tasks on the Web makes it necessary to be accurate in the terms of recommending correct documents upon a user's query. For this matter, there are numerous approaches proposed to tackle this dilemma. Methods which use citation scores, a full-text approach, using coauthor networks etc. are some examples of such systems. Nevertheless, each of these techniques suffer from one or more critical issues which we highlighted them in our previous works (Alli, 2015; Alli et.al., 2015) and proposed solutions for them.

Previously (Alli, 2015) we introduced a summary-based method which takes into account an extractive summary of papers in order to recommend relevant papers to an input paper. Moreover, we proposed a novel way to investigate similar papers from one's publication record. We call this method; *similarity of textual references to visual features (Alli, 2015)* as it takes into account the similarity of fragment texts that are referring to any visual element of appear such as tables and figures.

The motivation behind such work is due to the fact that there is no existing method which intellectually recommends papers from -at least- first author of an input paper. We do believe that using proposed method, hence we can benefit users with a better quality in recommendation.

The primary goal of this paper is to illustrate the effectiveness of this method on the retrieval behavior for recommending scientific paper.

RELATED WORK

Using Collaborative and Content-Based Filtering in a Digital Library

(A.Vellino 2009) suggested a collaborative system to recommend research papers for producing numerical rating rather boolean rating that TechLens+ (R. Torres et.al 2004) produces. Therefore, they use Page Rank values in their algorithm. The expectation of the result was to enhance the recommendation results for research papers. However, the author of the paper mentioned that the evaluation results shown that Page Rank values notably decreased the quality of recommendation.

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