Collaboration Spheres: Finding Reviewers for Scholarly Publications

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Abstract. Science is an incremental process. New breakthroughs are built on top of previous results which will themselves be the basis for future developments once validated and accepted for publication. However, identifying suitable reviewers for a particular article is not an easy task. Not only do journal editors need to have a thorough, personal knowledge of their journals and the members of the community who can be suitable reviewers but also they must have an eye for spotting potential conflicts of interest that may raise biased reviews. Thus, means are required that help editors in order to identify suitable reviewers for an article. In this paper we present an expert finding system based on the application of the Collaboration Spheres search-by-example visual interface, to the case of the American Psychologic Association, a publishing body with over 70 journals and 134,000 members.

1 Introduction and motivation

Automatic review assignment is very beneficial for many people such as conference organizers, journal editors, and grant administrators. Currently, within the APA Vivo Platform [**?**] this review assignment task is done manually.

The APA Vivo Platform is ...

The Collaboration Spheres [] are a well-know system within the Workflow Scientific community. CSs focus on the combination of recommendation technologies and exploratory search user interfaces for a powerful and simplified access to repositories in scientific communities. CSs aim at providing a mechanism to explore, share and reuse information objects and user expertise based on the exploitation of semantic descriptions, relations, and similarities between information objects and users in order to provide advanced search functionalities.

In this paper we present an application, Expert Finder, aiming to help journal editors, conference and workshop chairs on identifying suitable reviewers for a particular paper, by providing a nice visualisation of related authors and papers. To this end, the application relies on an innovative social network visualisation, namely Collaboration Spheres. Basically, we have adapted the already existing CSs for building the Expert Finder system.

2 Expert finder

The Collaboration Spheres are illustrated by the APA prototype that we have developed. It consists on a web application that covers the process of finding a good reviewer for a specific article or publication. The whole process is driven by the actions performed by the user while creating different contexts towards his/her final objective which is finding an expert for a specific article. A context is a group of articles and authors surrounding the main article that are used as search parameters. Each action allows the modification of the context of the Collaboration Spheres in an intuitive way and offers summaries of information that may help on understanding the available resources.

To be included ....

- no se explica a qu propsito sirve ese interfaz, por qu motivos se usa una representacin de crculos concntricos y no de otro tipo,
- por qu es til que el usuario pueda hacer bsquedas creando un contexto de inters (search by example) en lugar de tener que escribir una query en texto libre o hacindo bsqueda por facetas, etc.
- No se explica lo que es un contexto de inters ni para qu sirve ni cmo se utiliza su contenido para construir una query.
- No se explica cmo se relaciona el contenido del context of interest con el resto del dataset, es decir, cmo se extraen los topics relevantes del context of interest y se usan para identificar los expertos que podran servir como potenciales revisores en funcin de los topics comunes y el nmero de artculos.
- Un ejemplo de uso como el escenario de demo que hemos usado aclarara para qu sirve todo esto, que no queda claro.

2.1 Interface Description

The user interface, illustrated in Figure 1 has been designed in order to keep a minimalist layout that makes user experience smooth and simple. This simplicity does not renounce to provide the content needed by te users in the aim of getting the desired results. The main part of the screen displays a set of concentric circles that serve both as a playground to customize the search and as a front of the most relevant results of the search. These circles are the Collaboration Spheres metaphor, where the importance of the elements placed in the circles decreases as we move away from the center. This metaphor is supported not only by proximity to the center, but also by colors and iconography as we describe below. The center of the circles contains the article for which we are looking for reviewers. The immediate adjacent circle is the place where the user can define different contexts (each context created is equivalent to a search) by adding and removing authors and articles. The two external circles collect the most relevant reviewers that the system has found in order to tackle the main article together with the context that surrounds it. Other aspect that is covered by the Collaboration Spheres is the usage of a color code and warning icons when showing the results on the circles. The colors follow the traffic-light metaphor,

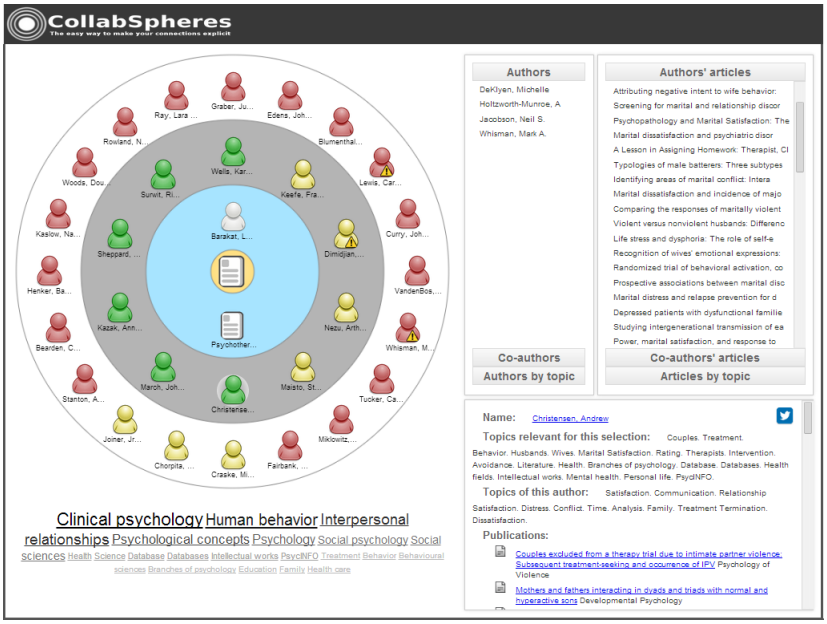

Fig. 1. Collaboration Spheres user interface

where green represents the best reviewers, yellow is used for other good reviewers and red is used for the less (but still) recommended reviewers. As we evaluate possible conflicts between the reviewers and the article to be reviewed, we are able to warn the users by adding a warning icon for those recommendations where conflict has been detected (author, previous co-author or same organization are examples of conflicts in our scenario).

On the right of the screen there are two different columns that gather three distinct lists each. The first column focuses on authors at different levels:

1. The first level shows the main authors of the article.
2. The second level shows other authors that had collaborated with the main authors in previous publications.
3. The third level presents a set of relevant authors whose work share one or more topics with the main article.

A parallel approach has been taken for the second column which focuses on articles at three different levels:

1. The first level shows other articles authored by the main authors.
2. The second level shows a set of articles authored by previous co-authors.
3. The third level presents a set of relevant articles that have related topics with the main article.

The preselection of elements enhances the user experience because the user has to deal with a set of related items instead of a huge amount of unlinked information.

Every element from the lists is draggable and can be dropped at the circles. The drag-and-drop action allows the user to create their customized context in the Collaboration Spheres. Every time that a new element is added to the context, a tag cloud that is placed under the circles gets updated. This tag cloud represents the key topics for the created contexts and provides an informative abstraction of the search at a simple glance. Some of the elements at the tag cloud are a link to their corresponding Wikipedia and APA Thesaurus[3] URIs.

Apart from that, it is worth to mention that every element is clickable in order to get a summary of its contents, together with the link to the resource itself in the VIVO platform enhancing the users exploration. A twitter search for the most relevant topics of every element is provided with the intention of adding a nice feature of pointing topic appearance in social networks.

3 Conclusions and Future Work

This is the worst conclusions ever ...

In this paper we have described a system for finding reviewers for scholarly publications, developed in the context of a joint project with APA. Future work includes the evaluation of the tool in real case scenario with the participation of experts.

Acknowledgments

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References

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[3] A thesaurus of Psychological Index Terms, which is updated regularly to encompass new and changing topics.