

Conference organization using ontology based information correlation from multiple web resources

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Abstract: Years of information pumping and exchanging across the web, making it saturated by data, especially in the scientific domain. Consequently, the (semi-)automatic applications become a necessity to find appropriate information in a brief time. Therefore, the Web witnessed the evolution of these applications with time. Despite this, the problem has not been fully solved with the presence of a large amount of conflicted and outdated data. In order to get more accurate and ranked results, it was interesting to correlate this information, especially with its existence within multiple sources. This is typically useful during setting up a conference, when we need to find information about social events and experts.

Index Terms—Expertise computing, Information correlation, Ontology, Semantic web

I. INTRODUCTION

Today, the web plays the key role of interaction and exchange between researchers. Consequently, the scientific community is still working on the development of (semi-)automatic applications, especially for acquiring researchers' information and computing their expertise, and many applications are emerged in this context [1,3].

Despite this, the problem has not been fully solved with the presence of a large amount of repeated, conflicted and outdated data. Therefore, a new approach of acquiring, correlating and merging data from heterogeneous sources is proposed, in order to enhance the results of the mentioned issues.

II. THE PROPOSED APPROACH

We aim to demonstrate our new approach of extracting and correlating information from multiple Web resources within a system that aims to find and propose experts as reviewers or program organizers for a conference in a specific domain, as well as propose social events (Hotels, touristic sites, events...) and logistics in a specific location and date.

A. Framework

After a thorough study of the previous work [1,2,3,4], which address the issues of information extraction, profiling and expert finding, we have introduced the Framework of our system. By which we provide the mentioned services through exploiting the correlated information and semantic Web technologies. The figure below, show our framework global view. It presents all principal components from the interface to the Web resources and what is between them.

The system aim firstly to collect data about researchers and social events separately, from their different sources by the wrapping process. As shown in the figure 1, each source has its local ontology and thus its own data. So after wrapping, the profiling process begins by the unification of all local ontologies by a global ontology for the entire system in order to merge the extracted data.

Therein lies the key idea of our proposed approach, when the system correlates the repeated instances for

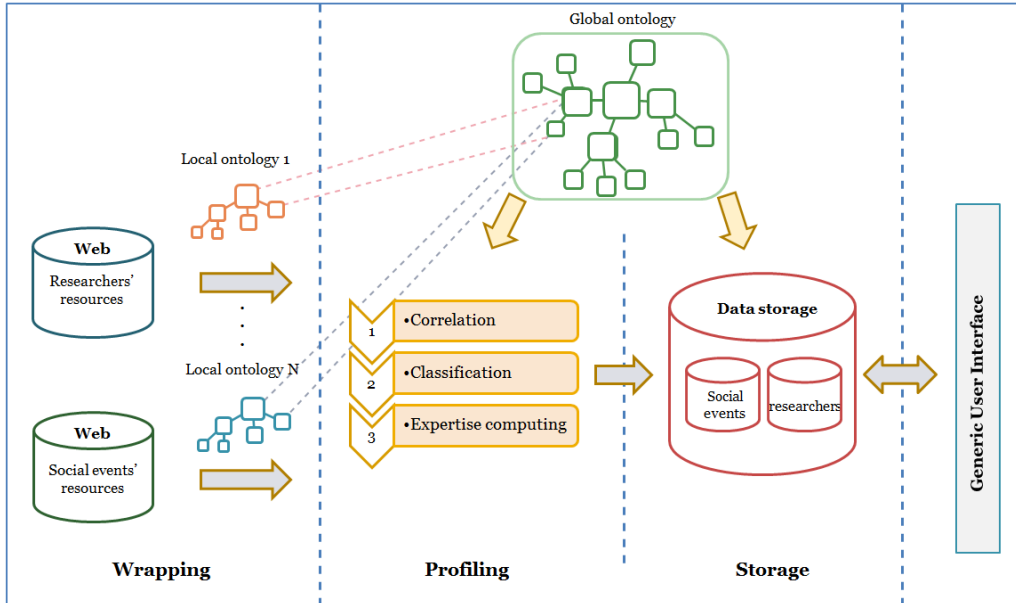


Figure 1. Our framework global view

each class and property from the global ontology. Then, using the correlated information as features, a classification is performed, in order to overcome the problem of conflicted and repeated data.

In this stage, the system uses the resulted information to construct the profile of each city, containing all its social events. The same step is performed to constructing the researchers' profiles, in addition to the expertise computing step for all researchers activist in the same domain.

Finally, all profiles are stored in the system repository in form of RDF file, allowing the conference organizers to query the system about the desired requests.

B. Experimental results

Referring to the framework described in Figure 1, we have implemented the initial steps of our conference organizer system by extracting researchers' information from LinkedIn and Foaf-search, and social events' information from Facebook and Foursquare.

An evaluation was performed on the results. So as future work, supplementary sources are proposed in order to obtain more comprehensive results as a robust base to the correlation process. In turn, the correlated information will be an introduction to the classification process, where we aim to merge and associate discarded data to the appropriate person and city.

III. CONCLUSION

In this paper, we have presented a conference organizer system based on a new approach of ontology based information correlation. The efforts are still ongoing in this context, due to the importance of this service, in addition to the massive inflation in the structured and unstructured data.

REFERENCES

- [1] Juanzi LI, Jie TANG, Jing ZHANG, Qiong LUO, Yunhao LIU, Mingcai HONG. Arnetminer: expertise oriented search using social networks. *Frontiers of Computer Science in China*, 2008: 94~105.
- [2] D. Beneventano, M. Orsini, L. Po, A. Sala and S. Sorrentino. An Ontology-Based Data Integration system for data and multimedia sources. *2009 IEEE International Conference on Semantic Computing*.
- [3] R. Punarnut and G. Sriharee. A Researcher Expertise Search System using Ontology-Based Data Mining. *Seventh Asia-Pacific Conference on Conceptual Modelling (APCCM 2010)*, Brisbane, Australia, January 2010.
- [4] K. Balog, Y. Fang, M. de Rijke, P. Serdyukov and L. Si. *Expertise Retrieval*.(2012)