Expertise Finding for an Electronic Journal

Muhammad Tanvir Afzal, Narayanan Kulathuramaiyer, Hermann Maurer
(Institute for Information Systems and Computer Media
Graz University of Technology, Graz, Austria
{mafzal, nara, hmaurer}@iicm.edu)

Abstract: Finding expertise is an important task required in all organisations and institutions. In looking for expertise, one typically relies on the compilation of information from multiple sources such as organisational directories and social networks. This approach has been applied to enhance the Journal of Universal Computer Science to enable it to become a still more valuable scholarly resource. This paper describes a multi-faceted representation of expertise, by consolidating human specified expert profile with systemic assessment of expertise. The multi-faceted approach is an important in the consolidation of information from multiple sources, in an effort to expand on the characterisation of expertise. The strength of this approach is drawn from the incorporation of intangible metrics for expertise assessment. This paper has revealed interesting directions for the automatic discovery of expertise in scholarly communities.

Keywords: multi-faceted expert profile, expertise matrices, digital journal
Categories: H.3.1, H.3.2, H.3.3, H.3.7

1 Introduction

The discovery of expertise is crucial in supporting a number of tasks. A variety of tools have been implemented within organisations to find experts and expertise for different scenarios. Most related works make use of explicitly specified expert profiles constructed manually. The problem with such manually constructed profiles is that they tend to be developed for particular projects and constantly need to be updated e.g. [Pipek et al 2002].

Using an entirely automated mechanism for determining user expertise may also not be adequate in itself. As an illustration, Google Scholar employing an automated approach had wrongly identified names of places such as Ann Arbour, or Milton Keynes as cited authors [Postellon 2008]. This also highlights the non-trivial nature of expertise mining and the difficulty faced in the disambiguation of individuals.

There are also expertise detection systems that were based entirely on an analysis of user activity and behaviour while being engaged in an electronic environment. [Krulwich and Burkey 1995] have analyzed the number of interactions of an individual within a discussion forum as a means of constructing an expert's profile. Although such an approach is useful in monitoring user participation, measures such as number of interactions on a particular topic is in itself not reflective of knowledge levels of individuals.

This paper explores the discovery of expertise within the context of a digital electronic journal, the Journal of Universal Computer Science. J.UCS to date has more than 1,200 peer-reviewed articles covering all topics of Computer Science.