

Summary of PhD research

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Title

Supporting Quality Assessment Processes in User-centred Health Information Portals

Supervision

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Summary

Quality control is a critical issue for online health information provision, where domain experts play an important role in evaluating and selecting quality and relevant resources to meet health consumers' individual knowledge needs. This research aims for a semi-automated approach to tackle the challenges domain experts encounter for resource quality control in the context of health information portals. A qualitative study has been conducted to investigate the domain experts' needs for intelligent supports in resource identification, selection and description processes. As a result, the architecture of a domain expert dashboard is proposed, where an information quality assessment framework is distinguished among a suite of intelligent tools. An intelligent quality assessment tool is developed to explore the extent to which intelligent technologies can support domain experts for resource quality control in a portal context.

Research Questions

In the development and the maintenance of a health information portal's knowledge repository, how to improve the scalability of manual resource quality appraisal processes undertaken by domain experts remains a practical problem.

This research aims to answering the following questions:

- 1) To what extent can intelligent technologies support domain experts in the processes of quality evaluation and description for resource quality control in information portals? What can be automated and where will human intervention be needed?
- 2) In this intelligent quality control approach, what are the requirements of a framework for assessing information quality, and what are the intelligent features of a quality assessment tool to facilitate collaborations between human and machine?

Research Approach

In this PhD project, exploratory research will be involved in both theory and practice regarding resource quality appraisal issues in the context of SIP. As a result, the action research methodology, which commits to bring both the practice improvements and the new field knowledge (McKay et al. 2001) will be adopted. Under this action research framework, a system development method will be used as the problem

solving approach (Burstein et al. 1999). Cycles of reflective conceptual model building, prototyping and evaluation (Burstein 2002) will be involved to deliver a user-sensitive quality framework and tool as the key research outcome.

Contribution to Knowledge

Quality control is a critical issue in online health information provision where information portals or filtered gateways play an important role by providing health consumers evaluated resources of high quality (Eysenbach and Diepgen 1998). However, review services provided by information portals require intensive labor work of domain experts to evaluate, select and describe quality and relevant resources to meet health consumers' individual knowledge needs (Burstein et al. 2005). The involved manual quality appraisal processes make the development and the maintenance of a portal's knowledge repository very expensive and time-consuming. The emergence of new solutions, such as supporting these processes with intelligent tools, is imperative to solve the scalability issue.

This PhD study endeavors to develop a semi-automated approach to tackle the challenges domain experts encounter in resource quality appraisal for achieving quality control in health information portals. A quality assessment framework together with an intelligent informatics tool is proposed to complement the manual and laborious review processes currently used in practice.

About the Researcher

Jue Xie is a Research Assistant at the Faculty of Information Technology, Monash University, Australia. She is also a PhD student starting from March 2007. Jue holds a Bachelor degree of Information Management from Zhejiang Gongshang University in China. She also completed her Master of Information Technology at Monash in 2002. Her PhD study is looking to investigate quality issues associated with health information on the Internet, particularly how to support domain experts who work for third-party gateways/information portals in evaluating online health information through the use of intelligent technologies. Her research interests lie within Web information systems, information quality and management. Before doing her PhD, she had a number of years experience as a research programmer in a variety of component-based software engineering projects at Monash.

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