

# Summary of PhD research

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## Title

A User-sensitive Quality Assessment Approach for Health Information Portals

## Supervision

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## Summary

Quality control is a critical issue for online health information provision, where domain experts play a vital role in evaluating, selecting and describing quality and relevant resources to meet individual consumers' information needs. This research aims at developing a semi-automated approach to tackle challenges domain experts encounter for resource quality control in the context of health information portals. Informed by a domain expert study, this research proposes a quality framework and an intelligent tool to support the quality assessment processes involved in managing portal content. Feasibility of the proposed semi-automated quality assessment approach has been tested through tool prototyping.

## Research Questions

This research intended to explore the roles of human and computer in assessing the quality of web-based information resources in a web portal context. Specifically, this research aims to answering the following questions:

1. What are resource quality assessment processes in developing and maintaining the content of a web information portal? What tasks and activities are involved in the whole processes? What can be automated and where will human intervention be needed?
2. To what extent can intelligent technologies support human experts making value judgements in the quality assessment processes to meet portal users' information needs? What are the requirements of a quality framework and what are the features of a quality assessment tool to facilitate collaborations between human and computer?

## Research Approach

This research concerns with finding new approaches that employ applicable intelligent technologies to support the manual resource quality assessment processes currently used in practice. It presents a multi-disciplinary, exploratory and applied research committing to '...study the effective design, delivery, use and impact of information technology [IT]' (Keen 1987 p.3) through the practical problem solving in real-world scenarios. Design-science research is justified as the most suitable research approach to explore the above research questions, thus chosen as the research framework to guide the overall design of this thesis research. Under this research

framework, the system development method is used as the problem solving approach (Burstein et al. 1999). Cycles of reflective conceptual model building, prototyping and evaluation (Burstein 2002) are 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 and user-sensitive approach to tackle the challenges domain experts encounter in resource quality appraisal for achieving quality assurance in health information portals. A quality framework together with a quality assessment tool is proposed to complement the manual and laborious review processes currently used in practice.

## **About the Researcher**

Jue Xie is a PhD student at the Faculty of Information Technology, Monash University, starting from March 2007. She also serves as a Research Assistant at the faculty. 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 to investigate online information quality assessment and management issues, particularly the application of intelligent technologies in addressing and solving these issues. Her research interests also lie in Web information systems, decision support systems and search technologies. Before doing her PhD, she had 5 years experience as a research programmer in a variety of component-based software engineering projects at Monash. In mid-2009, Jue had successfully completed a 3 month internship program at Microsoft Research Asia lab in Beijing as part of her research training.

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