

**Project title: Intelligent Semantic Web Services for Distributed Organizational Memories**

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**Department: Computer Information Systems & Quantitative Methods**

**Project summary:**

This grant has helped to produce research results that include an approach to developing intelligent semantic Web services and a design of intelligent tutor systems (ITS) in e-learning. The intelligent semantic Web services are envisioned as system cells that actively discover, learn and communicate knowledge on the Web. In this project, the approach is developed to create the services, which utilizes a system behavior model to represent an intelligent agent, and proposes a high degree of automatic synthesis using code generation and program templates. In addition, we apply organizational memory dissemination technologies to the e-learning system design. The ITS provides personalized labs for computer programming students by filtering instruction materials that are considered as the organizational memory of educational institutions. The evaluation results of the ITS show that the personalization is effective for those without strong programming backgrounds. Finally the research direction is moving toward the study of addressing issues in planning personalized learning paths in e-learning. The learning paths consist of sharable content objects in the organizational memory acquired from knowledge domain experts. Although we have not applied for external grants, funding opportunities are identified. A proposal will be written and submitted to a learning and education program of the National Science Foundation.

**Publications:**

Developing Intelligent Semantic Web Services – a book chapter of Advances in Electronic Business, Vol. 2, Theme: Semantic Web and Intelligent Web Services (in press).