

Guest Editorial

Special Issue on Fuzzy Approaches for Ontology Applications and Adaptive Web Services

Recently, the research on the ontology has been spread widely to be critical components in the knowledge management, Semantic Web, business-to-business applications, and several other application areas. Meanwhile, Web services play an important role in the development of distributed systems and the composition reveals a vital strategy for enterprise collaboration. The necessity of adaptation is apparent in the Web services world. In addition, the fuzzy approaches for ontology applications and adaptive Web services provide a linguistic methodology to deal with the knowledge model with uncertainty. The objective of this special issue is to highlight an ongoing research on fuzzy approaches for ontology applications and adaptive Web services as well as their applications on various domains.

This volume contains eight papers that consider different aspects of perception based on the ontology, fuzzy set, web services, and knowledge mining. The first four papers describe the applications about the ontology. *Rule- and OWA-based semantic similarity for user profiling* by Marek Reformat and Seyed Koosha Golmohammadi proposes a new method for updating a user profile based on analyzing user's browsing behavior, and identifying the most relevant items that should be added to the profile. *An ontology-based fuzzy inference system for computer Go applications* by Chang-Shing Lee, Mei-Hui Wang, Shi-Jim Yen, Yu-Jen Chen, Cheng-Wei Chou, Guillaume Chaslot, Jean-Baptiste Hoock, Arpad Rimmel, and Hassen Doghmen presents an ontology-based fuzzy inference system to provide the regional alarm level for a Go beginner or a computer Go program in order to place the stone at the much more appropriate position. The third paper *An ontology-based framework for itebank integration and knowledge sharing* by Shih-Pang Tseng, Chun-Wei Tsai, Ming-Chao Chiang, and Chu-Sing Yang proposes a novel framework to not only effectively integrate information available on the Internet, but also properly organize the information into a unified itebank of an e-Learning system. In the fourth paper *An active multidimensional association mining framework with user preference ontology* by Chin-Ang Wu, Wen-Yang Lin, and Chuan-Chun Wu proposes an active multidimensional association mining framework that incorporates with user preference ontology, containing surrogate queries that represent frequently used queries in the query history log.

The next four papers describe the applications of the fuzzy theory in the image, data mining, competitiveness of a product, and information systems projects. The fifth paper *Multi-modal image retrieval by integrating Web image annotation, concept matching and fuzzy ranking techniques* by Ja-Hwung Su, Bo-Wen Wang, Tien-Yu Hsu, Chien-Li Chou, and Vincent S. Tseng designs an Intelligent SeMantic Image explorER (iSMIER) to not only consider the requirements of usability, intelligence, and effectiveness for image retrieval, but also obtain the desired images from the image collection easily and effectively. The sixth paper *An efficient tree-based fuzzy data mining approach* by Chun-Wei Lin, Tzung-Pei Hong, and Wen-Hsiang Lu develops a Compressed Fuzzy Frequent Pattern (CFFP) tree structure to store the related information in the fuzzy mining process. In the seventh paper *A FNP approach for establishing the optimal and efficient capacity re-allocation plans for enhancing the long-term competitiveness of a semiconductor product*, Toly Chen evaluates the long-term competitiveness of a product based

on its yield learning model and proposes a Fuzzy Nonlinear Programming (FNP) approach to optimize the effects of capacity re-allocation. In the last paper *Fuzzy multicriteria decision support for information systems project selection* Chung-Hsing Yeh, Hepu Deng, Santoso Wibowo, and Yan Xu present a fuzzy multicriteria group decision making approach for evaluating and selecting information systems projects.

As guest editors of this special issue, we thank the authors for their contributions. We also would like to thank Miss Mei-Hui Wang and Miss Chi-Fang Lo, members of the Ontology Application & Software Engineering (OASE) Lab at National University of Tainan, Taiwan, for their supports of this special issue. We are most grateful to the referees for spending their valuable time in reviewing the manuscripts and providing kind cooperation and help. Finally, we greatly appreciated Professor Wen-June Wang, Editor-in-Chief of International Journal of Fuzzy Systems (IJFS), and Professor Wei-Yen Wang, Managing Editor of IJFS, for providing us with the opportunity to edit and publish this special issue, as well as for their valuable instructions in the editorial process.

Chang-Shing Lee, Guest Editor

Dept. of Computer Science and Information Engineering, National University of Tainan
Tainan, Taiwan

Tzung-Pei Hong, Guest Editor

Dept. of Electrical Engineering, National University of Kaohsiung
Kaohsiung, Taiwan

Vincenzo Loia, Guest Editor

Dept. Mathematics & Computer Science, University of Salerno
Salerno, Italy