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Chang-Shing Lee (SM'09) received the Ph.D. degree in computer science and information engineering from the National Cheng Kung University, Tainan, Taiwan, in 1998. He is currently a Professor with the Department of Computer Science and Information Engineering, National University of Tainan, where he is the Dean of Research and Development Office. He is also an Associate Editor of the IEEE Transactions on Computational Intelligence and AI in Games (IEEE TCIAIG), Applied Intelligence, and Journal of Ambient Intelligence and Humanized Computing (AIHC). His current research interests include ontology applications, type-2 fuzzy sets and applications, knowledge management, healthcare, capability maturity model integration, scheduling, and artificial intelligence, and he is also interested in intelligent agents, web services, machine learning, and image processing. He also holds several patents on ontology engineering, document classification, image filtering, and healthcare.

Prof. Lee was awarded outstanding achievement in Information and Computer Education & Taiwan Academic Network (TANet) by Ministry of Education of Taiwan in 2009, and excellent researcher by National Science Council of Taiwan in 2010 and 2011. Additionally, he also served the program-chair of the 2011 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2011) and was the Emergent Technologies Technical Committee (ETTC) Chair of the IEEE Computational Intelligence Society (CIS) from 2009 to 2010. During 2008, he was the ETTC Vice Chair of the IEEE CIS. He is also a member of the Program Committees of more than 50 conferences. He is a member of the Taiwanese Association for Artificial Intelligence and the Software Engineering Association Taiwan.

Type-2 Fuzzy Ontology Model and Its Applications (I)

It is widely pointed out that classical ontology is not sufficient to deal with imprecise and vague knowledge for some real world applications like personal diabetic diet recommendation and the game of Go. On the other hand, fuzzy ontology can effectively help to handle and process uncertain data and knowledge. This research project proposes a novel ontology model based on interval type-2 fuzzy sets (T2FSs) that is called type-2 fuzzy ontology (T2FO) with application for knowledge representation in the field of personal diabetic diet recommendation or game of Go. The T2FO is composed of (1) a type-2 fuzzy personal profile ontology (type-2 FPPO), (2) a type-2 fuzzy domain ontology (type-2 FDO), and (3) a type-2 fuzzy personal domain ontology (type-2 FPDO). In addition, the research project will also present a T2FS-based intelligent agent for different applications.