Preface

Hui-Huang Hsu

Department of Computer Science and Information Engineering,
Tamkang University, 151 Ying-Chuan Road,
Tamsui, Taipei, 25137, Taiwan
E-mail: h_hsu@mail.tku.edu.tw

Takuo Suganuma

Research Institute of Electrical Communication,
Graduate School of Information Sciences,
Tohoku University,
2-1-1 Katahira, Aoba-ku, Sendai, Japan
E-mail: suganuma@shiratori.riec.tohoku.ac.jp

Biographical notes: Hui-Huang Hsu is an Associate Professor of Computer Science and Information Engineering at Tamkang University in Taipei, Taiwan. He received both his PhD and MS from the Department of Electrical and Computer Engineering at the University of Florida, USA, in 1994 and 1991, respectively. He has published over 70 referred papers and book chapters, as well as participated in many international academic activities. His current research interests are in the areas of machine learning, data mining, bioinformatics, ubiquitous intelligence and multimedia processing. He is a senior member of the IEEE.

Takuo Suganuma is an Associate Professor of Research Institute of Electrical Communication of Tohoku University, Japan. He received a DrEng from Chiba Institute of Technology, Japan. He received Best Presentation Award of 8th JWCC, Outstanding Paper Award of UIC2007, etc. His current research interests include agent-based computing, flexible network and symbiotic computing. He is a member of IEICE, IPSJ and IEEE.

Data mining integrates the fields of artificial intelligence, machine learning, databases, statistics and information retrieval under a new goal of extracting useful knowledge from a large amount of data. This special issue addresses advances on intelligent techniques and applications. Five papers presented in the Third International Conference on Complex, Intelligent and Software-Intensive Systems (CISIS 2009) are collected in this special issue. CISIS 2009 was held in Fukuoka Institute of Technology, Fukuoka, Japan, on 16–19 March 2009. Descriptions of the papers are as follows.

Sakurai and Mori presented a new method in discovering characteristic patterns with missing values. The data examples with missing values can be retained while the missing values need not to be completed or interpreted. The method is effective comparing with existing methods in the experiments. Lin et al. proposed a tree-based algorithm called MCFPTree for the problem of constraint-based pattern discovery. The new algorithm is

much more efficient than two other methods – MCFP and FP-Growth+. Mirzal discussed the relationship between trading networks and the World Wide Web from the perspective of preferential attachment. A link-structure-ranking algorithm is thus derived and analysed for trading networks. Mino et al. evaluated their work of a fuzzy-based Call Admission Control (CAC) system with an extension of considering the priority of ongoing connections. The experimental results showed that the system has a good behaviour in maintaining the QoS of ongoing connections. Lazar et al. investigated the Non-negative Matrix Factorisation (NMF) algorithm for its clustering capability. It was applied to image segmentation for a multivariate image and outperformed the popular fuzzy *k*-means algorithm.

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