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## Preface

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**Biographical notes:** Yuhang Yang received his BS degree from the Electronic Engineering Department of Chengdu Institute of Meteorology, China, in 1982. From 1984 to 1987, he studied telecommunications and computer networking and received an MSEE from Aston University, Great Britain. Now, he is a Professor of the Department of Electronic Engineering, Shanghai Jiao Tong University. His current research interest lies mainly in the field of computational science, broadband wireless, grid networking, information security and online video distribution. He has about 150 international academic publications including IEEE academic journal and conference papers. He has been invited to be a member of the Technical Programme Committee or session chair for more than 30 international conferences.

Yanchun Zhang is currently a Full Professor and Director of Centre for Applied Informatics Research at Victoria University. He obtained his PhD in Computer Science from The University of Queensland in 1991. He has been active in areas of database and information systems. He has published over 200 research papers in refereed international journals and conference proceedings. He is currently communication expert panel member of Cheung Kong Scholars Programme from Ministry of Education of China (since 2006), and a member of Australian Research Council (ARC) College of Experts (2008 to 2010), and a steering committee member of The ARC Research Network in Enterprise Information Infrastructure (EII). He is Editor-In-Chief of *World Wide Web Journal*.

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With the rapid development of information science and technology, innovative computing in image processing and applications has attracted more and more attention, which is an important underpinning for techniques used in information science and applications. This special issue aims to give a timely and comprehensive presentation of the findings and achievements from such an explosion in the areas of advances in innovative computing in image processing and applications.

This special issue contains extended versions of selected contributions to the field of innovative computing in image processing and applications presented at the International Conference on Information Computing and Applications – ICICA 2010, held at the Tangshan, China, on 15 and 18 October 2010. After two rounds of rigorous peer-review and revision processes, only, six out of 200 papers presented at ICICA 2010 were selected for this special. These papers deal with a wide range of problems and propose some novel techniques to solve these problems.

We briefly summarise those papers as follow.

The first paper, ‘Tracing significant association rules using critical least association rules model’, by Zailani Abdullah et al., proposed an efficient association rules tracing scheme based on critical least association rule model to improve system performance.

The second paper, ‘Energy-based coefficient selection for digital watermarking in wavelet domain’, by Fouzia Jabeen et al., presents an optimisation procedure using the response surface methodology to increase the strength of clinch joints, based on an adaptive moving target zone.

The third paper, ‘Fuzzy control and co-simulation for semi-active suspension based on improved genetic algorithm’, by Jingjun Zhang et al., presents the application of radial basis functions (RBF) for solving a set of non-linear 2D Saint-Venant equations.

The fourth paper, ‘Segmentation for pulmonary artery from mediastinum to lung in CTA datasets’, by Jiehui Zhang et al., presents a new aggregate homotopy method to solve the non-linear complementarily problem. The homotopy equation is constructed based on the aggregate

function which is the smooth approximation to the reformulation of the non-linear complementarily problem.

The fifth paper, ‘The colour and texture – a novel image retrieval technology based on human vision’, by MingSheng Liu et al., proposes a method to find all the independent modules in dynamic fault tree with interdependent basic events and repeated events, which converts dynamic fault tree to dependent tree according the dependency relations of the nodes.

The last paper, ‘Design of security system for multi-sensor fused image’, by Feng Huang and Xilong Qu, propose a new method for automatic building extraction

based on improved watershed segmentation, mutual information match and improved snake model.

The guest editors would like to thank all the authors for their contributions and the referees for their helpful comments on the papers. Last but not least, we are deeply grateful to the Editor-in-Chief Prof. Nadia Nedjah and the publishing staff of *International Journal of Innovative Computing and Applications* for their support and guidance during the preparation of this special issue, and staff at the Inderscience Publishers for their assistance in publishing this special issue.