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## Preface

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**Biographical notes:** Kun Ma received his PhD degree in Computer Software and Theory from Shandong University, Jinan, China, in 2011. He is a senior lecturer in Provincial Key Laboratory for Network Based Intelligent Computing and School of Information Science and Engineering, University of Jinan, China. He is the Co-Editor-in-Chief of *International Journal of Computer Information Systems and Industrial Management Applications (JCISIM)*. He is the managing editor of *Journal of Information Assurance and Security (JIAS)* and *Information Assurance and Security Letters (IASL)*. He is the guest editor of *International Journal of Grid and Utility Computing (IJGUC)*. His research interests include model-driven engineering, cloud computing, big data management and multi-tenant techniques.

Ajith Abraham (Director, MIR Labs) received the MS from Nanyang Technological University (NTU), Singapore, and PhD (CSE) from Monash University, Melbourne, Australia. His research and development experience includes more than 23 years in the industry and academia. He works in a multidisciplinary environment involving machine (network) intelligence, cyber security, sensor networks, web intelligence, scheduling and data mining. He has given more than 70 conference plenary lectures/tutorials and invited seminars around the globe. He is an author/co-author of 900+ publications. He serves/has served the editorial board of over 50 international journals, guest-edited 40 special issues on various topics.

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With the rapid advances in information technologies, future generation networks will face challenges in providing highly reliable and high-quality performance. Cloud computing has rapidly emerged as an exciting new paradigm shift from existing IT infrastructures to using the services of software applications, computing and storage over wide-area distribution networks. This trend is being empowered by the drastic performance improvements of IT infrastructure components together with key innovations in the way cloud computing infrastructure is built (e.g. grid computing, utility computing, services computing, ubiquitous computing) to provide computing and communication services anytime and anywhere.

Recently, cloud computing technology has been widely used for a variety of applications. Innovative applications for the cloud, such as services and smart mobile applications, have become increasingly popular. The great demands of economic globalisation also foster the spreading of applications. In addition, security and privacy have become important issues for applications in the cloud. This special issue aims to foster the dissemination of state-of-the-

art research in the area of innovative cloud computing applications. This includes design, architecture and utility, particularly related to the use of cloud computing technologies and the presentation of future trends.

The special issue received 27 submissions that were peer-reviewed by top experts in the field. Based on the reviews and recommendations, only five papers were selected for publication. The acceptance rate is 18.5%. Contributions of these papers are summarised as follows.

In the first paper, Ma and Zhang present a bookmarklet-triggered unified literature sharing system (BULSS) in the cloud. For the purpose of simplifying the literature sharing, this cloud-based system allows easy manipulation of the literature sharing and academic exchange, which are used frequently and are very often necessary in scientific activity such as research, writing papers and dissertations, and preparing reports. They evaluated the proposed system in the aspects of sharing methods, low latency, and the storage.

In the second paper, Yang et al. present a comprehensive evaluation model of mashup, which considers three aspects: functional similarity, QoS characteristics and transactional

properties. Furthermore, the analytic hierarchy process (AHP) is adopted to analyse the global constraints and consider the relevant services with different granularity. The experimental results show that the proposed mashup optimisation algorithm is feasible and effective.

In the third paper, Iyengar et al. propose the solution of Multilevel Thrust Filtration (MTF) mechanism, authenticating the incoming requesters and detects the different types of DDoS kind of attacks at different levels. For earlier detection of the most intensive attacks, a hybrid solution is proposed to detect four different kinds of attacks. Finally, the experiment shows the advantages of proposed solution.

In the fourth paper, Zhang et al. propose a data placement strategy based on large neighbourhood search (LNS). This strategy has two main stages: pre-calculate the dependencies during the initial strategy generation stage; search better data placement strategy during the relaxation and re-insertion stage. The experiments show a very good overall performance, especially in reducing time delay caused by data transfer among data centres.

In the last paper, Serhani et al. aim at realising a service-monitoring scheme through the provision of a flexible underlying infrastructure to adapt to various cloud based

service characteristics. Authors present some experiments to illustrate the capability of the monitoring scheme in detecting and reporting violations of SLAs for both single and composite SaaS services.

The guest editors of this special issue wish to thank the referees for their valuable inputs, as well as the authors for their contributions. We would also like to thank all the reviewers for their timely help. It is expected that this special issue will contribute to advance knowledge in the evolving field of cloud computing. We hope that the readers will share our joy and enjoy reading this special issue and find useful in their research. Special thanks to Professor Fatos Xhafa (Editor-in-Chief of the *IJGUC*) for his guidance.

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