

GUEST EDITORIAL PREFACE

Special Issue on New Techniques of Services Computing

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The services computing is a new cross-discipline and widely accepted paradigm that leverages both science and technology needed to bridge the gap between business services and IT/telecommunication services. With the emergency of new techniques such as Big Data, Mobile Computing, Cloud Computing, etc., new trends of services computing techniques emerge for developing new computing technology to enable larger-scale business services efficiently and effectively. This special issue includes the best papers selected from the Eighth Asia-Pacific Services Computing Conference. This year, we have received 205 submissions, and after a rigorous peer review process, a number of 15 papers with highest scores were selected by the program committee to be invited to be submitted to International Journal of Web Service Research. In this special issue, we present five high quality research articles on new topics that are promising in current emerging Services Computing solutions. We believe the designs proposed in these ten articles will help to inspire

more interesting and promising solutions in this research area.

In the first paper, “Software-Defined Networking in Access Networks: Opportunities, Challenges and Choices”, Chen Tian et al. show that the unique characteristics of access networks pose significant challenges to the two basic ideas: *Centralized State Control* and *Uniform Device Abstraction*, while the object-oriented abstraction might be a better choice for access networks to make a better software-defined implementation.

In the second paper, “Navigation Route based Stable Connected Dominating Set for Vehicular Ad Hoc Networks”, Yishun Chen et al. consider reducing the changes of Connected Dominating Set during the runtime of a VANET, by selecting CDS node with high stability using vehicle navigation route.

In the third paper, “QoS Evaluation of End-to-end Services in Virtualized Computing Environments: A Stochastic Model Approach”, Guofeng Yan et al. present a novel hierarchical

stochastic approach to evaluate the QoS of e2e virtualized cloud services using Quasi-Birth Death structures.

In the fourth paper, “A Generation Method of Network Security Hardening Strategy Based on Attack Graphs”, Zhao Chao et al. consider the problems of high time complexity and costly hardening strategies in previous methods and propose a method for generating low cost network security hardening strategies based on attack graphs.

In the fifth paper, “Temporal-aware QoS-based Service Recommendation using Tensor Decomposition”, Zhi Li et al. propose a temporal-aware QoS-based service recommendation framework and design a prediction algorithm based on Tucker decomposition.

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Jia Zhang is an Associate Research Professor at Carnegie Mellon University's Silicon Valley campus. Her recent research interests center on service oriented computing, with a focus on collaborative scientific workflows, Internet of Things, service oriented architecture, and semantic service discovery. She has co-authored one textbook titled “Services Computing” and has published over 120 refereed journal papers, book chapters, and conference papers. She is now an Associate Editor of IEEE Transactions on Services Computing (TSC) and of International Journal of Web Services Research (IJWSR), and Editor-in-Chief of International Journal of Services Computing (IJSC). Previously at the Northern Illinois University as a tenured Associate Professor of computer science, Zhang taught courses in software engineering and databases and opened two graduate-level courses based on her co-authored textbook “Services Computing.” Zhang also has nine years of architect and technical lead experience in the software industry.

Hanhua Chen received the Ph.D. degree in 2010 from School of Computer Science and Engineering, Huazhong University of Science and Technology, where he is now working as an associate professor. His research interests include distributed systems, services computing, online social networks, peer-to-peer systems and wireless sensor networks. He received the National Excellent Doctorial Dissertation Award of PR China in 2012, the Intel Early Career Faculty Honor Program Award in 2013, and the Excellent Young Scientist Award of NSFC in 2014. He is the TPC co-chair of the eighth Asia-Pacific Services Computing Conference (APSCC 2014). He is an editor board member of the International Journal of Distributed Sensor Networks (IJDSN) and a young associate editor of Frontiers of Computer Science (FCS). He is a member of the IEEE and ACM.