Guest Editorial Preface

Special Issue on Service-Oriented Computing

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Service-oriented computing (SOC) is a cross-disciplinary paradigm that relates to a group of concepts, principles and methods integrating computing in service-oriented architecture. Some common examples are network services and web services, where the applications are designed and implemented based on independent component services with standard interfaces. It also covers service-oriented composition, communication and management. In a broader sense, it is a branch filed of distributed network system. Adopting SOC and other network information services is always a challenging task for many corporate IT or non-IT organizations. The emerging demand of applying SOC in industry encourages and impels the research and development in this field.

The special issue on "Service-Oriented Computing" endeavours to address the latest development of methods, applications and algorithms arisen in the field of SOC. The objective of this special issue is to provide a platform for researchers in the field to present their recent work and studies. The special issue covers some interesting aspects of SOC, e.g. web services and applications, cloud service and related applications, and network and communication services. Initially there were 26 submissions received. 6 papers were selected based on the quality of the work, reviewers' suggestions and editorial screening. Each of the accepted paper went through two rounds of double-blind reviews with at least three independent reviewers. The contributors of the special issue are geographically balanced, which makes our special issue with a comprehensive global perspective. Herewith, we summarise each contribution as follows.

The first paper entitled "A Web Service Composition Approach Based on Planning Graph and Propositional Logic" by Shiyang Deng et al. Service composition is a classic research topic in service computing. This paper presents a novel two-stage approach to compose Web services based on a planning graph and propositional logic. In their experiment, two well-known service composition algorithms were used to compare with their proposed method QoS-based minimum cover set family (Q-MCSF), and their algorithm demonstrates superior performance in terms of time and the number of services handled over the existing methods.

"Exploring relationship quality of user's cloud service-The case study of SaaS CRM" by Tung-Hsiang Chou is the second contribution of this special issue, which proposes a research model to examine the correlation among relationship quality, cloud service, and SaaS-Qual. The author used an empirical method to evaluate the model. The research model aims at investigating the SaaS quality and influences for the continuance use of cloud CRM service. From the empirical studies, it indicated

that rapport, responsiveness, reliability, flexibility, features, and security exhibited strong explanatory power to the SaaS-Qual construct. The results also showed the path coefficients to have the highest reliability that means the construction of SaaS-Qual to have most representative capacity. Moreover, the author found that SaaS-Qual is good confirmation and significant for the relationship quality and continuance use, which has a strong influence on these constructs.

The third paper is from Dimitris N. Kanellopoulos, entitled "Recent Progress on QoS Scheduling for Mobile Ad hoc Networks". The paper presents the survey of scheduling mechanisms for MANET MAC protocols. The author discussed scheduling protocols from considerable viewpoints. The author classified scheduler in four major categories, comprehensively explained each scheduling class and provided detail quantitative comparisons.

The fourth paper is "A Node-oriented Discrete Event Scheduling Algorithm Based on Finite Resource Model" by Yu Huang et al. This paper proposes the resource-limited node-oriented model of discrete event scheduling by adding some restrictions on network resources. The node-oriented model of discrete event scheduling is a model that allocates computing resources based on nodes and makes the discrete event simulation as a simulation task on nodes. The authors analysed the reasons of low performance in large-scale network simulation, presented the ideal node-oriented model of discrete event scheduling and carried out the contrast experiment of the resource-limited node-oriented model of discrete event scheduling and NS2.

"Aggregated Handover Authentication for Machine Type Communication" is the fifth contribution in this issue by Xin Chen et al. This paper addresses the signal congestion and vulnerability of existing MTC switching authentication protocols, and proposes an aggregation switching authentication policy that can avoid signal congestion and effectively improve the security of authentication. The author used the coloured petri nets for modelling analysis and proved the validity and safety of the proposed strategy through experimental results.

The last paper for this special issue is "A Study on Satisfaction Level among Amateur Web Application Developers towards Pigeon-Table as Nano Web Development Framework" by Ong Chin Ann et al. The authors proposed a web development framework namely pigeon-table based on ngPigeon project, which aims to streamline web content generation, especially the content extracted from table data from MySQL database with a single html tag. Pigeon-table framework is developed with intuition of easy to learn for newbie web developers, which makes the idea standing out from other complex and sophisticated web application and service framework. The authors put forward a qualitative study on their framework by means of questionnaire. The results are quite promising.

Overall, there are 3 papers related to network service, 2 papers on web services and applications and 1 paper on cloud service and application. We did receive many other excellent works from researchers in the field, yet space constrains more papers from appearing in this special issue. We sincerely appreciate JOEUC/IGI to give us this opportunity to organize this special issue, special thanks to the Editor in Chief Steven Walczak for his patience and assistance, without which we cannot make this special issue successful. Finally, yet importantly, we are grateful to all members of our editorial board and reviewers for their time and effort to make this happen.

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