EIC Editorial: Research Innovations in Service-Oriented Solutioning

Liang-Jie (LJ) Zhang, *Senior Member*, *IEEE*

———————————— ✦ ————————————

W HEN a Service-Oriented Architecture (SOA) is adopted in various solution domains, systematic ways of creating SOA-based solutions play a very important role in increasing a team's productivity and asset reusability. In order to formalize systematic approaches for solution and application architects and developers, individual techniques could be leveraged for wide adoption or further innovations. In this issue of *TSC*, I am very pleased to include four research papers centered on various aspects of service-oriented solutioning. They span topics including repository for privacy preservation, information propagation protocols, value-based services composition, and optimal service allocations.

The first paper is "A Privacy Preserving Repository for Data Integration across Data Sharing Services" by Stephen S. Yau and Yin Yin. This paper proposes a privacy-preservation-related repository to integrate data from different data sharing services without central authorities. Based on users' integration requirements, this repository is restricted to processing the integration results. It cannot access other information in the data and use it for different goals. Yau and Yin's paper is in the knowledge area of security, privacy, and trust (M.13) in services computing.

The second paper is "Continually Learning Optimal Allocations of Services to Tasks" by Youssef Achbany, Ivan J. Jureta, Stephane Faulkner, and Francois Fouss. This paper presents the Multi-Criteria Randomized Reinforcement Learning (MCRRL) approach to help identify and select services. MCRRL builds a learning model based on various Quality of Service parameters, deadline, reputation, cost, and user preferences by leveraging a reinforcement learning algorithm. This learning model helps capture the user behaviors, preferences, and historical service selection data, and introduces new selection decisions in the process of continuously learning. Their paper belongs to the area of optimization of services systems (M.1.0.e) in services computing.

The third paper is "Dissemination Protocols for Event-Based Service-Oriented Architectures" by Brahim Medjahed. In this paper, the author presents a framework to enable event-driven interactions in SOA environments. The key aspects of the presented framework include notification patterns, a dissemination pattern, and a prototype implementation based on a disaster management case study. Medjahed's paper is mainly related to the areas of Service-Oriented Architecture (M.4), Web services (M.3), and services value chain collaboration (M.6.2) in the field of services computing.

The last paper is "Selective Querying for Adapting Web Service Compositions Using the Value of Changed Information" by John Harney and Prashant Doshi This paper presents a method of selectively querying services based on the value of changed information, which measures the value of the change that potentially affects the composition. Harney and Doshi's paper can be categorized into the services composition area (M.6) as well as the area of Web services (M.3) in the *TSC* taxonomy.

I hope you enjoy this issue of the *IEEE Transactions on Services Computing*. I also continue to look forward to receiving your high-quality paper submissions. If you have any suggestions for making *TSC* better, please feel free to let me know.

Liang-Jie (LJ) Zhang
Editor-in-Chief