Editorial Preface

Services Composition, Testing and Invocation

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This issue of the *International Journal of Web Services Research* (IJWSR) collects four papers related to services composition, testing and invocation.

The first paper is titled "An Optimal and Complete Algorithm for Automatic Web Service Composition." Rodriguez-Mier, Mucientes, Vidal, and Lama tackle the problem of Web service automatic composition, using an algorithm aiming to find all valid compositions from the angle of the semantic input-output message structure matching. The underpinning is a service dependency graph. Scalability is considered.

The second paper is titled "A Scalable Multi-Tenant Architecture for Business Process Executions." Pathirage, Perera, Kumara, Weerasiri, and Weerawarana propose a scalable multi-tenant workflow engine, toward providing Workflow as a Service on the cloud. Multiple business processes are allowed to run simultaneously within the engine. The design and implementation of the workflow engine is presented. Performance factor is studied.

The third paper is titled "Lightweight Wireless Web Service Communication T0hrough Enhanced Caching Mechanisms." Papageorgiou, Schatke, Schulte, and Steinmetz address the issue of reducing the size of data transmission in Web services-enabled mobile applications. They propose a solution that leverages cached responses with a complete freshness ensured. Evaluation studies are reported as well.

The fourth paper is titled "Composite Service Recommendation based on Bayes Theorem." Wu, Chen, Jian, and Wu tackle Web services testing from logs of web service execution, including service functionality, QoS record, and execution order. Bayesian approach is applied to analyze service execution logs and recommend service sequences. Experimental results are also reported.

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