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

The first paper is titled “Using XML-Based Multicasting to Improve Web Service Scalability”. Tekli, Damiani, and Chbeir tackle the performance challenge of SOAP by proposing an approach of Differential SOAP Multicasting (DSM). Based on the concept of Tree Edit Distance, they develop a filter-differencing approach to reduce message aggregation time, by identifying the common patterns and differences between SOAP messages. Simulation experiments are reported.

The second paper is titled “A Collaborative QoS-Aware Service Evaluation Method Among Multi-Users for a Shared Service”. Dou, Zhang, and Chen propose AHP (Analytic Hierarchy Process), a multi-criteria decision-making method, to transform qualitative personal preferences and user priorities into numeric weights. They also present a QoS-aware service evaluation method serving for a co-selection process over a shared service.

The third paper is titled “A Metamorphic Relation-Based Approach to Testing Web Services without Oracles”. Sun, Wang, Mu, Liu, Wang, and Chen tackle the challenge of Web services testing, by proposing a metamorphic relation-based approach without oracles. Derived from the inherent properties of Web services under test, the proposed approach leverages metamorphic relations to generate test cases and evaluate test results. Case studies are presented.

The fourth paper is titled “Effective Service Composition in Large Scale Service Market: An Empirical Evidence Enhanced Approach”. Wang, Wang, and Xu present a semi-empirical services composition approach that extracts empirical evidence from historical experiences to provide guidance to service selection. Service communities and historical requirements are organized into clusters based on similarity measurement, and probabilistic correspondences between the two types of clusters are calculated through statistical analysis. Empirical experiments are presented.
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