Editorial Preface

Web Services in Access, Control, and Pricing

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This issue of the International Journal of Web Services research (JWSR) collects five papers on various topics of Web services.

Handorean, Sen, Hackmann, and Roman introduce a concept of a “follow me” session, which is an abstraction supporting services-oriented computing in Mobile Ad hoc NETworks (MANETs). An accompanying context-aware session management middleware is proposed to support the delivery of required functionality. A basic decision mechanism is presented depending on the connectivity window between candidate hosts. They also report a working implementation, demonstration application and simulation results.

Bertino, Squicciarini, Martino, and Paci propose a Web services-oriented access-control model, Ws-AC1, which offers flexible granularity in protection objects and negotiation capabilities. An authorization can be associated with either a single service or a service class; the negotiation capabilities of Ws-AC1, thus, are tied to identity attributes and service parameters. They present the formal definitions of the model and associated algorithms, as well as an encoding of the model in the WSDL standard.

Gannod, Timm, and Brodie explore a suite of automated software tools to facilitate the construction of OWL-S specifications, an upper ontology for Web services, from Unified Modeling Language (UML) specifications in eXtensible Markup Language (XML) representations. Then, their grounding tool allows a developer to map the processes generated in an OWL-S specification to operations in Web Service Description Language (WSDL) specifications.

Zhang, Zhang, and Zhang propose an auction-based pricing model for Web service providers. The unique features of Web services demand adapted auction models for pricing. They present a formal model tailored for Web services-based auctions and mathematically prove that different pricing models lead to different profits for service providers. They also propose to use Service Level Agreement (SLA) documents to extract service requestors’ risk preferences. The approaches and techniques presented in their paper can be applied to investigate and examine more facades of services-oriented auctions.

And finally, Fung, Hung, Linger, Wang and Walton propose a Quality of Services (QoS) Management Architecture to support dynamic end-to-end QoS requests and analyses in Web-service-oriented architectures. They propose a message tracking model by applying the Computational Quality Attribute (CQA) concepts of Flow-Service-Quality engineering. Quality attributes are defined, computed and acted upon as dynamic characteristics of the management system.