

Tutorial Session

Services Oriented Architecture and Semantic Web Processes

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Abstract

This tutorial presents what can be achieved by symbiotic synthesis of two of the hottest R&D and technology application areas: Web services and the Semantic Web. It presents the more recent evolution of the Web service platform towards rich Web service and process model annotation, and explores some of the promises and challenges in applying semantics to each of the steps in the Semantic Web Process lifecycle. In particular, we present current Web services directions and the role of semantics in annotation (Semantic Annotation of Web Services), discovery (Semantic Web Service Discovery), composition (Semantic Web Process Composition), process execution/enactment (Semantic Web Process Orchestration), and quality of service of Semantic Web Processes. We also review ongoing frameworks and initiatives such as Semantic Web Service Initiative Architecture Committee (SWSA) [1], Semantic Web Services Language (SWSL) [2] and OWL-S [3], as well as results from key projects such as the METEOR-S [4] which build upon research, technology and current standards in workflow processes, Semantic Web, Web services and simulation.

About the Presenters

Francisco Curbera is a Research Staff Member at IBM's T.J. Watson Research Center in Hawthorne, New York. He obtained a B.S. in Physics from Universidad Complutense (Madrid, Spain), and a M.S. and Ph.D. in Computer Science from Columbia University. His research activity has focused on using markup languages and component software approaches for application development. His recent work has focused on Web services and service oriented architectures. He is a co-author of the Web Services Description Language (WSDL), the Business Process Execution Language for Web Services (BPEL4WS), and WS-Policy among other core Web services specifications. He also co-chairs the WWW2004 track on Web Services.

Amit Sheth is a Professor of Computer Science and Director of the LSDIS lab at the University of Georgia. He is a co-founder and CTO of Semagix, Inc., a Semantic Web technology company based on the technology licensed from the LSDIS Lab. Earlier he worked at R&D in Honeywell, Unisys and Bellcore. He is one of leading researchers and entrepreneur in the areas of Semantic Web (and more broadly semantic information integration and interoperability) and workflow process management. He has given 17 keynotes at international conferences and workshops on the Semantic Web and semantic interoperability, several more keynotes on workflow and process management, and over 125 colloquia and invited talks. His research has led to over 150 publications, three significant commercial products, two start ups, and many deployed applications. More information is at: <http://lsdis.cs.uga.edu/~amit>

Kunal Verma is a research assistant and PhD student in the Computer Science department at the University of Georgia. His research interests span Web processes, databases and the Semantic Web. He has been actively involved in the METEOR-S project at the LSDIS Lab. During summer 2003, he worked as an intern at the IBM T.J. Watson Research Center on adding dynamic binding to BPEL4WS using Semantic Web technologies. He has published several papers on XML databases and Semantic Web services. More information is available at <http://lsdis.cs.uga.edu/~kunal>

References

- [1] Semantic Web Services Initiative Architecture Committee, <http://www.daml.org/services/swsa/>
- [2] Semantic Web Services Language, <http://www.daml.org/services/swsl/>
- [3] OWL-S, <http://www.daml.org/services/owl-s/1.0/>
- [4] METEOR-S: Semantic web services and processes, <http://lsdis.cs.uga.edu/proj/meteor/SWP.htm>