

# ≡≡≡ ICWS 2006

## Tutorial 3

### Automatic Web Service Composition

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#### Abstract:

The tutorial aims at providing a deep comprehension of the Web Service Composition problem and automated techniques to tackle it. Web Service Composition is currently one of the most hyped and addressed issues in the Service Oriented Computing. Starting from an analysis of current technologies and standards for Web Service Composition, the tutorial will lead the attendees to consider formal models at the base of current proposals, and techniques that can be fruitfully considered to address automatic composition synthesis in each of them. More in detail, attendees will consider: (i) basic technologies and standards for Web Service invocation and description (SOAP, UDDI, WSDL, ...); (ii) advanced technologies and standards for orchestration and inter-organizational process enactment, in particular WS-BPEL and WS-CDL; (iii) models for Web Service composition; (iv) formal tools for both data-centric and process-centric synthesis, including query reformulation à la Data Integration, transition-systems based formalisms, trace-based formalisms, logics of programs and processes. In particular, we will show how these formal tools can be applied for Automatic Web Service Composition; (v) current state-of-the-art research results in automatic service composition, drawing a comparison and defining a unifying framework.

#### About the Presenters:

Giuseppe De Giacomo (Ph.D. in Computer Engineering) is an Associate Professor at the Università di Roma LA SAPIENZA, Dipartimento di Informatica e Sistemistica, where he has conducted research for more than 10 years in the fields of knowledge representation and reasoning in databases, data integration, semantics interoperability, including service and process synthesis, and reasoning on dynamic systems. He is author of more than 100 papers in international journals and conferences in the areas of artificial intelligence, databases, information systems and cognitive robotics. He is member of the program committee of several of the most important conferences of the above areas. He is currently involved in some European and Italian research projects (TONES, INTEROP, SEWASIE, MAIS), in which he is investigating the application of reasoning techniques to semantics interoperability and service composition.

Massimo Mecella (Ph.D. in Computer Engineering) is a Research Associate at the Università di Roma LA SAPIENZA, Dipartimento di Informatica e Sistemistica, where, in the context of Italian and European research projects (WORKPAD, SemanticGOV, EU-PUBLI.com, VISPO, MAIS, eG4M), he conducts research on service composition and orchestration, mobile and adaptive information systems, cooperative architectures and software engineering for eGovernment and eBusiness. He has been author of various papers on Services, since the beginning of this new and exciting area, in the VLDB Journal, the specific VLDB Workshop on Technologies for eServices (TES), the International Conference on Service Oriented Computing (ICSOC) and the Workshop on Web Services, e-Business, and the Semantic Web (WES). He is author of a Ph.D. thesis entitled "Cooperative Processes and eServices".