# Editorial: Special Issue on Automated Specification and Verification of Web Systems

This special issue has been organized after the workshop WWV 2010: Automated Specification and Verification of Web Systems, which took place in Vienna, Austria, on July 30–31, 2010.

Design and construction of Web-based applications is becoming more and more challenging problem, as the role of these applications grows, their complexity increases, and related risk level raises. Many company Web sites have been turned into interactive, completely-automated, Web-based applications (such as those for stock trading, electronic commerce, on-line banking, travel agencies, etc.). Development of reliable applications requires appropriate specification and verification techniques and tools. Systematic, formal approaches to the analysis and verification can deal with the problems of this particular domain by automated and trustworthy tools that also incorporate semantic aspects. The accepted papers address some of these issues, such as formal modeling of service-oriented architecture systems and analysis of a regular expression matching technique frequently used in Web applications.

The article by *Rosario Pugliese and Francesco Tiezzi* introduces C⊙WS, a process calculus for orchestrating Web services. It is designed to specify and combine service-oriented applications and model their dynamic behavior. The paper illustrates how C⊙WS can model the phases of the life cycle of service-oriented applications and demonstrates it on the example of a case study. The interested reader can find the paper instructive to learn about modeling service-oriented applications using process calculi.

The article by *Yuto Sakuma, Yasuhiko Minamide, and Andrei Voronkov* proposes a translation from Perl style regular expression matching into transducers. By this representation it is possible to apply formal language theory in static analysis and verification of string manipulation programs. Regular expressions are very useful tool in Web application development. The authors experiment with their technique on regular expressions from various popular PHP programs.

These papers have been selected from nine submissions. We thank all the authors for their contributions and to the referees for their careful and thorough work. We thank also Jörg Siekmann, an Executive Editor of the Journal of

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