

GUEST EDITORIAL: Special Collection on Software Engineering and Semantic Web Technologies – Part II

Rafael Valencia-García

Facultad de Informática
Universidad de Murcia
Campus de Espinardo
30100 Murcia, Spain
Email: valencia@um.es

Francisco García Sánchez

Departament d'Informàtica
Escola Tècnica Superior d'Enginyeria
Universitat de València
Av. Vicente Andrés Estellés, s/n
46100 Burjassot, València, Spain
Email: Francisco.Garcia-Sanchez@uv.es

The Software Engineering community has developed different tools, methodologies, standards and technologies to support the specification, development, and maintenance of software. Conversely, Semantic Web technologies provide a common framework that allows data to be shared and reused across application, enterprise, and community boundaries. Despite the different origin of these research areas, the overlap between them is becoming a fact as demonstrated by the number of works applying research advances from one area into the other. For example, the application of Semantic Web Technologies in Software Engineering improves the reusability, sharing and extensibility of software models. On the other hand, Semantic Web Technologies can benefit from the more mature methods and standards developed by the Software Engineering community.

The purpose of this special collection was to collect innovative and high-quality research contributions regarding the role played by the Semantic Technologies in Software Engineering and the use of methods and techniques of Software Engineering in the scope of the development of Semantic Web-based software applications. This special collection aims to explore the synergies between these technologies and give insights on the recent advances in these topics by soliciting original scientific contributions in the form of theoretical and experimental research and case studies.

This Special Collection has received a total of 25 submissions. Only 32% of the submissions could be accommodated into the Special Collection, and the publication of various interesting works had to be unfortunately rejected.

The selected contributions have been separated into two different volumes. This second volume focuses on the application of software engineering-related techniques to the development of semantically-enhanced distributed systems. A brief introduction to each selected paper is presented in the following paragraphs.

In the first paper, entitled “Developing Families of Software Services: A Semantic Web Approach”, by Bošković *et al*, the authors propose a Semantic Web technologies-based approach for developing service-oriented software families and the accomplishment of different relevant tasks in this context.

The second contribution, entitled “Ontology-based Dynamic Role Interaction Control in Multi-Agent Systems”, by Jung and Kim, presents a semantically-empowered approach to dynamically

manage the interactions between agents in a multi-agent system by means of a role-based access control model.

The third paper, “CARL: A Complex Applications Interoperability Language based on Semantic Technologies for Platform-as-a-Service Integration and Cloud Computing”, by Jiménez-Domingo *et al*, introduces a new formal language in the scope of the Platform-as-a-Service level of Cloud Computing. Such language facilitates application integration and interoperability on the basis of Semantic Web technologies.

Finally, the fourth contribution, “A Learning Framework for Transitioning Network Intrusion Alerts Management System to Ontology”, by Fu *et al*, introduces a framework depicting how an intrusion alerts ontology can be learned and further enriched exploiting both a database schema and the stored data.

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BIOGRAPHICAL NOTES

Rafael Valencia-García received his BA, MSc and PhD degrees in computer science from the University of Murcia. He is an associate professor at the Department of Informatics and Systems, University of Murcia. His main research interests are the Semantic Web, Natural Language Processing and the application of Knowledge Technologies in Software Engineering. He has published over 80 articles in journals, conferences and book chapters. He is currently the prime investigator of two national projects concerning the development and application of semantic web technologies.



Rafael Valencia-García

Francisco García-Sánchez received his BA, MSc and PhD degrees in computer science from the University of Murcia. He is a PhD assistant professor in the Escola Superior Tècnica d'Enginyeria (ETSE) at the University of Valencia. His research interests include Agent Technology, Service-Oriented Architectures, Cloud Computing and the Semantic Web. He has conducted a number of research stays in world-leading research institutes in Ireland, Austria, the United States and Australia, and has published over 40 articles in international journals, international and national conferences and workshops. He has led several projects concerning the development of user interfaces to Semantic Web services execution environments and ontology-based intelligent systems to assist in accessing financial data sources.



Francisco
García-Sánchez