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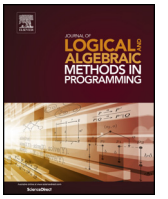

Editorial

Automated specification and verification of Web-based applications

This special section of the Journal of Logical and Algebraic Methods in Programming is the result of an open call for papers devoted to the themes of the workshop series on the Automated Specification and Verification of Web Systems (WWV), whose 11th edition was organised by us on 23 June 2015 in Oslo, Norway, as a workshop affiliated with the 20th International Symposium on Formal Methods (FM 2015). The WWV workshop series provides an interdisciplinary forum to facilitate the cross-fertilisation and the advancement of hybrid methods that exploit concepts and tools drawn from declarative, rule-based programming, formal methods, software engineering, and Web-oriented research.

Companies, organisations, and institutions nowadays offer most of their electronic services as sophisticated Web-based applications. Prominent examples include e-business, e-learning, e-government, and e-health services. The explosive growth of such applications and their increased complexity has made their design and implementation a challenging task, not in the least because at the same time quality, accessibility, security, and privacy issues need to be considered. Systematic, formal approaches to the specification and verification of Web-based applications are needed to address such issues by means of automated and effective techniques and tools.

Initially, four articles were submitted to this special section. After several extensive cycles of reviewing, during which each article was reviewed by three experts, we eventually decided to accept the following two articles that deal with the specification and verification of two different Web-based applications.

The article *An experience in using machine learning for short-term predictions in smart transportation systems* written by Davide Bacciu, Antonio Carta, Stefania Gnesi, and Laura Semini, evaluates the ability of certain machine-learning algorithms to predict the usage of bike-sharing systems in order to implement the most efficient ones as part of a service product line. The learning and evaluation is based on real-world data from a real-world application, viz. two years of trips collected from the deployment of the bike-sharing system *CicloPi* in Pisa, Italy. The result is a number of lessons learned from this experimental analysis concerning the feasibility of developing predictive services, which might be useful for vendors and administrators involved in the deployment of bike-sharing systems.

The article *A language-based approach to modelling and analysis of Twitter interactions* written by Alessandro Maggi, Marinella Petrocchi, Angelo Spognardi, and Francesco Tiezzi, presents the executable modelling language Twitlang, which can be used to specify Twitter interactions, and Twitlanger, which is an interpreter for Twitlang implemented in Maude. The formal model tries to capture real-world behaviour on Twitter, which was obtained by empirical analyses of actual Twitter actions like tweeting and retweeting. Maude's LTL model-checking facilities allow the authors to experiment the feasibility of verifying the propagation of messages within a network of Twitter accounts that are connected by follow relationships. This is illustrated in a realistic academic scenario of collaborative communication.

We thank the authors for their contributions and the numerous referees for their thorough and exhaustive reviewing. We are grateful to the editor-in-chief, Rocco De Nicola, for his support in the creation of this special section. Finally, we are indebted to the people at Elsevier for their continuous support, assistance, and—above all—patience during the editorial process.

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