Editorial

Maria Cristina Ferreira de Oliveira

Welcome to the third issue of Volume 19 of the Journal of the Brazilian Computer Society. The 12 papers included in this issue cover a range of topics spanning from theoretical to applied computer science.

The first three contributions are revised and extended versions of papers selected from the *WebMedia* 2011 conference (The *Brazilian Symposium on Multimedia and the Web*). In the first paper, authors José Cé Júnior, Achilles C. Prudêncio, Roberto Willrich and Madalena P. da Silva introduce an ontology-based approach to automatically translate Quality of Experience parameters (QoE) as perceived by network users into network Quality of Service (QoS) parameters. In the second, Marcos Vinicius Mussel Cirne and Hélio Pedrini describe a methodology to speed up the well-known marching cubes algorithm on a graphics processing unit, discussing several approaches based on auxiliary spatial data structures to improve its performance. In the third paper, authors Rodrigo Costa Mesquita Santos, José Rios Cerqueira Neto, Carlos de Salles Soares Neto and Mário Meireles Teixeira propose and evaluate an incremental, structural and contextual validation method for documents described in the Nested Context Language model.

In the fourth paper in this issue, Tuomas Ihme describes the results from a study on integrating software product line and agile application development in the context of large and complex financial IT systems. He discusses potential implications on business, architecture and project team level management, mostly related to the visibility and transparency of requirements, design constraints and the rationale behind design decisions.

The contribution by Araujo and Linhares Sales is on graph theory, specifically on the problem of determining the minimum weight of a proper coloring of a vertex-weighted graph G. The authors show a necessary and sufficient condition for the weighted chromatic number of G to be at least k, for any positive real k.

Eugenio Sper de Almeida, Haroldo Fraga de Campos Velho and Airam Jonatas Preto report results and findings from an investigation on the challenges of executing an important and computationally intensive meteorological application in grid environments.

In the following paper, author Antonio Marcos Alberti provides a conceptual review of the core ideas, concepts, and technologies behind the current state-of-the-art proposals on future Internet design, identifying and systematizing the most representative concepts and requirements underlying such proposals.

Rodrigo Ribeiro and Carlos Camarão discuss ambiguity in the context of programming languages that support context-dependent overloading, such as Haskell. The authors present a type system that does not allow context-free type instantiation and allows only a single type to be derived for an expression in a given typing context.

Rodrigo Fraxino Araujo, Marcio Eduardo Delamaro and José Carlos Maldonado address the problem of testing critical embedded systems. They describe an experimental evaluation of the pairwise combinatorial approach as a technique to generate test data applied specifically to Simulink-like models, also introducing an associated computational tool.

Authors Claudio S. V. C. Cavalcanti, Herman Martins Gomes and José Eustáquio Rangel De Queiroz contribute a systematic review on state-of-art techniques for the enhancement and analysis of digital photos, focusing on techniques that are potentially useful to automate the task of selecting

M. C. F. de Oliveira (✉)
Universidade de São Paulo, São Paulo, Brazil
e-mail: cristina@icmc.usp.br

photos from large collections or to enhance them by using some perceptual measure.

Guilherme Maia, Pedro O. S. Vaz de Melo, Daniel L. Guidoni, Fernanda S.H. Souza, Thiago H. Silva, Jussara M. Almeida and Antonio A. F. Loureiro have studied the collaboration network of authors from 30 editions of *The Brazilian Symposium on Computer Networks and Distributed Systems* (SBRC), revealing the most prominent communities within SBRC and interesting regional characteristics, as well as identifying researchers with central roles in the symposium's history.

In the last paper from this issue, authors Afonso D. Ribas, Antonio R. Carvalho Jr., Carlos M. S. Figueiredo and Eduardo F. Nakamura introduce a methodology to adjust the parameters of simulation models of wireless sensor networks to account for environmental conditions. They present experimental results for rainforest environments and illustrate the impact of the proposed approach by evaluating a localization solution.