
Editorial

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Biographical notes: Lorna Uden is a Professor Emeritus of IT Systems in the Faculty of Computing, Engineering and Technology at Staffordshire University. Her research interests include technology learning, HCI, big data, mobile learning, activity theory, knowledge management, web engineering, multimedia, e-business, service science and innovation, semantic web, software as a service (SaaS), internet of things and problem-based learning.

Welcome to Vol. 10, No 4 of the *IJWET*. There are four papers in this issue.

The first paper is ‘A branching-time logic to verify synchronously coupled concurrent systems and its relevance to web-based systems’ by Sungeetha Dkshinamurthy and Vasumathi Narayanan. According to these authors, this paper is a sequel to their previous work wherein they proposed a state-based partial-order concurrency model from a given specification of communicating finite state machines (CFSMs), constituting a co-operative system specification. These authors unfold the CFSMs by simulating them in global environment to generate what they proposed as communicating minimal prefix machines (CMPMs). In this research, the authors proceed from the unfolded CMPMs and go on to show that they form a distributed set of concurrent Kripke tree structures, over which they propose the logic computational distributed tree logic (CDTL) for model-checking. These authors proceed from the unfolded CMPMs and go on to show that they form a distributed set of concurrent Kripke tree structures, over which they proposed the logic CDTL for model-checking. Application of model-checking on web-systems was discussed.

The second paper is ‘A methodology to evaluate the maintainability of enterprise application integration frameworks’ by Rafael Z. Frantz, Rafael Corchuelo, and Fabricia Roos-Frantz. These authors argue that consulting companies that specialise in enterprise application integration commonly require adapting existing frameworks to specific domains. In this paper, the authors proposed a methodology that helps practitioners make a decision regarding which framework should be selected. These authors propose a method to produce a rank among a catalogue of measures. They illustrate their proposal with an industrial case study. Further research is needed to validate its use.

The third paper is ‘Consented consumer-centric non-functional property description and composition for SOA-based applications’ by Hanane Becha and Daniel Amyot. According to these authors, non-functional properties (NFPs) play an important role in the service-oriented architecture (SOA). Consumer-centric NFPs are the NFPs that should be included in a service description to help service consumers decide whether a

given service suits their needs. They can hence be used to enable NFP-based service selection and composition. However, nowadays, NFPs are often simply not advertised or are described in ad-hoc proprietary ways. Three important factors impede on the proper handling of NFPs in service descriptions:

- 1 the neglect of consumer perspectives in SOA
- 2 the lack of adequate descriptive mechanisms for a number of NFPs
- 3 a good understanding of NFP composability.

This paper proposes a concrete syntax for an externally consented catalogue of 17 consumer-centric NFPs, together with composition algorithms that can be effectively used for defining, selecting, and composing services for NFP-aware SOA-based application designs. A use case was used to illustrate the NFP composition algorithms. The NFP catalogue is also validated through its proof-of-concept integration with a mainstream technology: web service description language (WSDL).

The last paper is 'The skip-octree: a dynamic cloud storage index framework for multidimensional big data systems' by Yunyun Dong, Jing He, Shaowen Yao and Wei Zhou. The authors of this paper present a new multidimensional data index framework, called skip-octree, for multi-dimensional data index. The framework combines the features of two well-know data structures-octree and skip lists. This paper also describes the related algorithms, including point query, range query and point inserting algorithm. The authors argue that experimental results show that the performance of data points to insert, delete, query and range query is much more efficient than the traditional octree structure. More empirical studies are needed to verify this approach.