

Call for Papers
Special issue of IEEE Transactions on Software Engineering

Quantitative Evaluation of Computer Systems

Guest Editors:

Jane Hillston, *Edinburgh University*, Marta Kwiatkowska, *University of Birmingham* &
Miklos Telek, *Budapest University of Technology and Economy*

Software systems are expected to meet a multitude of quantitative constraints, such as timely response, performability and energy efficiency. Quantitative evaluation of systems refers to a set of techniques that can be applied to analyse such systems and obtain a range of quantitative characteristics of their performance, for example the probability of delivering a message by a given time or minimum battery usage for a dynamic power management policy over a period of time.

The aim of this special issue is to publish novel research work that contributes to the development of methodologies, techniques and tools for quantitative evaluation of software systems. Its scope covers the theoretical foundations, models and modeling languages, specification and design notations, analysis methods, simulation, verification and run-time monitoring algorithms, numerical techniques, software tools and case studies. Topics of interest include but are not limited to:

- Schedulability analysis techniques
- Formal specification and verification of probabilistic systems
- Concurrency theory for probabilistic systems
- Analysis of randomized algorithms
- Model-checking algorithms
- Optimization techniques
- Probabilistic decision-making and planning
- Hybrid and hierarchical modelling and evaluation techniques
- Stochastic and timed Petri nets
- Stochastic and timed process algebras
- Stochastic and timed automata
- Queueing networks
- Markov chains
- Non-Markovian models and algorithms
- Numerical and analytical solution techniques
- Efficient simulation techniques
- Quantitative extensions of UML
- Measurement and benchmarking

Papers are solicited that describe basic or applied research on any of the above topics. Abstracts should be emailed to the guest editors at jeh@inf.ed.ac.uk, mzk@comlab.ox.ac.uk and telek@hit.bme.hu, followed by full papers submissions (a week later) via: <https://mc.manuscriptcentral.com/cs-ieee/>.

Submissions must conform to the journal's submission guidelines and must not have been published previously or be currently under consideration for publication in any other journals or conferences. Significant extensions to substantive papers published in conferences are also welcome. In accordance with the TSE submission policy, such papers should be submitted together with the conference version and a summary of extensions.

Important Dates:

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| Guest Editors receive emailed titles and abstracts by | 12-Jan-08 |
| Full paper submissions submitted into Manuscript Central by | 19-Jan-08 |
| First round of reviews completed by | 19-Mar-08 |
| Major revisions due by | 19-May-08 |
| Second round of reviews completed by | 19-Jun-08 |
| Minor revisions due by | 3-Jul-08 |
| Final acceptances given to Authors by | 10-Jul-08 |
| Publication materials due by | 24-Jul-08 |
| Publication tentatively in late 2008 issue | |