

COMPUTING JOURNAL (BY SPRINGER)

SPECIAL ISSUE ON “SOFTWARE ARCHITECTURE FOR CODE TESTING AND ANALYSIS”

SCOPE:

Software Architectures (SA) have been a long advocated as a means for improving the dependability of software systems. In this light, different methods have been proposed for assessing the architectural decisions correctness with respect to system goals and requirements, and to drive a better system design and implementation.

Testing and analysis play a central role in architecting dependable systems. Conformance and regression testing techniques, as well as functional and non functional analysis methods have been proposed to improve the resultant software systems. Building on earlier events (ROSATEA series of workshops, ISARCS Symposium, WICSA 2011 workshop) that were organized in this domain, and considering the increasing interest from practitioners (demonstrated by the Architecture Support for Testing initiative run by practitioners and researchers¹) this special issue wants to investigate the current role of software architecture in the testing and analysis of complex software systems. More specifically, this special issue focuses on **approaches, methods, and experience in using software architecture-based testing and analysis for improving the resultant system.**

Papers of interest for this special issue include, but are not limited to:

- Using architecture to produce test artifacts aimed at testing and analysis code
- Using architecture analysis to minimize the need of testing
- Fault models associated with particular architecture styles or patterns
- Architectural design approaches that make systems more testable and analyzable
- Testing implementations for conformance to architecture
- Architecture support for testing and analyzing dynamic and evolving systems
- Architecture-based system Self-Testing
- Formal system verification based on architectural descriptions
- Using extra-functional analysis to predict system's qualities
- Architecture driven model-based testing of software systems
- Industrial experience in software architecture-based analysis and testing
- Practical experience in using Architecture Description Languages for analysis and testing based on software architectures

SUBMISSION:

Research papers should describe innovative and significant original research relevant to this special issue. Experience papers should report on industrial practice and applications of software architecture for code testing and analysis.

We invite to submit a one page abstract first, clearly describing the problem to be solved, its relevance, and a sketch of the proposed solution. Abstracts must be sent directly to all the special issue editors by emailing them all. They will be used to find the most appropriate reviewers for the paper to be submitted. Then, the authors will be asked to submit the full paper, that will be peer reviewed by the Special Issue evaluation committee.

¹ <http://www.henrymuccini.com/index.php?pagelId=AST>

Submitted papers must conform to the Computing Journal Format and Submission Guidelines (<http://www.springer.com/computer/journal/607>), and must not exceed 25 pages, including all text, references, appendices and figures. All submissions must be in English. Submissions must be in PDF format.

Submission of full papers shall be done through the Computing Journal submission system at <http://www.editorialmanager.com/comp/>, by selecting the "SI: Software Arch. for Code Test. & Anal" article type.

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IMPORTANT DATES:

Abstract submission (1 page): 30 January 2012 [to be sent by email to the SI editors]

Submission of full papers: 16 April 2012 [to be submitted online]

Notification: 25 June 2012