



<http://www.disim.univaq.it/seams2015/>

Call for Papers

Self-adaptation and self-management are key requirements in many modern and emerging software systems, including the industrial internet of things, cyber-physical systems, cloud computing, and mobile computing. These systems must be able to adapt themselves at run time to preserve their operation in the presence of uncertain changes in their operating environment, resource variability, new user needs, intrusions, and faults.

Solutions to complement software systems with self-managing and self-adaptive capabilities have been proposed by researchers from different areas including software architecture, fault-tolerant computing, programming languages, robotics, and run time program analysis and verification. Additionally, solutions have been proposed in related areas like biologically-inspired computing, artificial intelligence, machine learning, control systems, and agent-based systems. The SEAMS symposium focuses on applying software engineering to these solutions, including methods, techniques, and tools that can be used to support self-* properties like self-adaptation, self-management, self-healing, self-optimization, and self-configuration.

The objective of SEAMS is to bring together researchers and practitioners from many of these diverse areas to investigate, discuss, and examine thoroughly the fundamental principles, state of the art, and critical challenges of engineering self-adaptive and self-managing systems.

Topics of Interest: All topics related to engineering self-adaptive and self-managing systems, including:

Foundational Concepts

- self-* properties
- feedback control
- algorithms for self-adaptation
- decision-making
- dealing with uncertainty
- runtime aspects
- problem determination (e.g., logging, analysis, diagnosis)
- adaptive autonomy

Languages

- formal notations for modeling and analyzing self-* properties
- programming language support for self-adaptation

Constructive methods

- requirements elicitation techniques
- reuse support (e.g., patterns, designs, code)
- design and architectural support
- enhancing systems with self-adaptive features

Analytical Methods for Self-Adaptation and -Management

- evaluation and assurance
- verification and validation
- frameworks for their analysis and testing

Application Areas

- Industrial internet of things
- Cyber-physical systems
- Cloud computing
- Mobile computing
- Autonomous robotics
- Service-oriented systems
- Dependable computing
- Smart user interfaces

Artifacts* and Evaluations

- model problems and exemplars
- resources, metrics, or software that can be used to compare self-adaptive approaches
- experiences with deployed self-adaptive and self-managing systems solving science, engineering, business, or society problems

***There is a specific session to be dedicated to artifacts that may be useful for the community as a whole. Please see <http://www.disim.univaq.it/seams2015/> for more details.**

After the symposium, a set of selected papers will be invited to submit to the ACM Transactions on Autonomous and Adaptive Systems (TAAS).

Paper Submission Details

We are soliciting three types of papers: long papers (10 pages for the main text, inclusive of figures, tables, appendices, etc.; references may be included on up to two additional pages), position papers for new ideas (6 pages + 1 references) and artifact papers (4 pages + 1 reference). Long papers should clearly describe innovative and original research or explain how existing techniques have been applied to real-world examples. Position papers should describe novel and promising ideas and/or techniques that may not be fully validated. Artifact papers must describe why and how the accompanying artifact may be useful for the broader community. All submitted papers and artifacts will be reviewed by at least three program committee members. Papers must not have been previously published or concurrently submitted elsewhere. The accepted papers will appear in the symposium proceedings that will be published in the ACM and IEEE digital libraries. Papers must conform to IEEE formatting guidelines (see ICSE 2015 style guidelines), and submitted via EasyChair.

Further Information

Symposia-related email should be addressed to:
seams2015@seams-symposia.org

Important Dates:

Abstract Submission: 9 January, 2015
 Paper Submission: 16 January, 2015
 Notification: 18 February, 2015
 Camera ready: 27 February, 2015

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