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Aims and Scope

The Dagstuhl Artifacts Series (DARTS) publishes evaluated research data and artifacts in all areas of computer science. An artifact can be any kind of content related to computer science research, e.g., experimental data, source code, virtual machines containing a complete setup, test suites, or tools.

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■ Preface

The International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS) brings together researchers and practitioners from diverse areas to investigate, discuss, and examine the fundamental principles, state of the art, critical challenges, and applications of engineering self-adaptive and self-managing systems.

Modern and emerging software systems, such as industrial Internet of Things, Cyber-Physical Systems, cloud and mobile computing, have to operate without interruption. Self-adaptation and self-management enable these systems to adapt themselves at runtime to preserve and optimize their operation in the presence of uncertain changes in their operating environment, resource variability, new user needs, attacks, intrusions, and faults.

Approaches to complement software-based systems with self-managing and self-adaptive capabilities are an important area of research and development, offering solutions that leverage advances in fields such as software architecture, fault-tolerant computing, programming languages, robotics, run-time program analysis and verification, among others. Additionally, research in this field is informed by related areas such as control systems, machine learning, artificial intelligence, agent-based systems, and biologically inspired computing. The SEAMS symposium focuses on applying software engineering to these approaches, including methods, techniques, processes and tools that can be used to support self-* properties like self-protection, self-healing, self-optimization, and self-configuration.

To facilitate maturing the field of self-adaptive systems by means of reuse of implementation and datasets and repeatability of experiments, SEAMS promotes artifacts that help to provide a common basis for comparison and further research in the area.

Artifacts provide a model problem, an exemplar, or a framework useful for the broader community. A model problem provides a description of a problem that poses and highlights fundamental or characteristic challenges in the area of self-adaptive systems that should be addressed. An exemplar is an implementation of a system that can be used with multiple self-adaptive approaches. A data repository provides data (e.g., logging data, system traces, survey raw data) useful in other studies. A framework offers tools and services illustrating new approaches to self-adaptation that could be used by other researchers in different contexts.

Artifacts consist of an artifact paper included in the SEAMS proceedings and implementation or a dataset, which is available in this DARTS series.

This year, we selected 3 artifact submissions. Each submission was reviewed by 4 reviewers who looked both at the relevance and the quality and reusability of the artifact. Due to copyright reasons, we were able to include only 2 artifacts in this DARTS series.

We hope that the selection of SEAMS 2018 artifacts will serve as a community resource for comparative evaluation of research on self-adaptive systems in the years to come.

Assembling this selection of artifacts would not have been possible without the dedicated effort and expertise of the artifact evaluation committee members, who worked under tight time constraints.

Special thanks to them, as well as to all the authors for making their artifacts available to the community.

Tomas Bures, Artifacts Chair of SEAMS 2018
Danny Weyns, Program Chair of SEAMS 2018
Jesper Andersson, General Chair of SEAMS 2018

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■ Artifact Evaluation Process

Included are the artifacts that were accepted to SEAMS 2018. We required each artifact to be accompanied by an artifact paper (published in SEAMS 2018 proceedings). Every artifact was reviewed by four artifact evaluation committee members. The artifact evaluation committee was setup to contain no overlap with the regular program committee of SEAMS 2018. This allowed selection of members who could provide better feedback to artifacts and also make sure that artifact evaluation committee members were not overburdened by other reviewing duties at SEAMS 2018.

Each one of the artifact evaluation committee members was assigned 1 to 2 artifacts. The evaluation committee members were asked to evaluate the artifacts along several criteria:

- Is the artifact related to self-adaptation?
- Is the artifact relevant for the community?
- Is the problem addressed by the artifact well described and motivated?
- Is the use of the artifact well exemplified?
- Does the artifact describe well how it can be installed and used?

The evaluation committee members were asked to try each artifact themselves to make sure the artifact does what it claims.

The committee members were encouraged to provide detailed and constructive feedback to the authors, as well as a clear recommendation of acceptance or rejection of the artifact submissions. In case of differences in overall assessment between reviewers, they were asked to try to reconcile it among themselves, with the Chair intervening only to manage the discussion and facilitate reaching an agreed decision among all committee members involved.



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