CALL FOR PAPERS

18th Workshop on Adaptive and Reflective Middleware (ARM 2019)

co-located with Middleware 2019, 9th December 2019, UC Davis, CA, USA

https://arm2019.github.io/

Important Dates

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All deadlines are 11:59 PM (AoE Anywhere on Earth)

Paper submission: September 20, 2019

Acceptance notification: October 3, 2019

Camera-ready: October 17, 2019

Workshop: December 9, 2019

Workshop Overview

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The Adaptive and Reflective Middleware (ARM) workshop series started together

with the ACM/IFIP/USENIX International Middleware Conference, with which it has

been co-located every year since this first edition. It is now an established

venue to provide researchers with a leading edge view on the state of the art in

adaptive middleware and the engineering of adaptive and autonomous distributed

systems. New classes of applications such as smart and connected city

applications, industrial networked and cloud applications, the Internet of

Things, intelligent transport, smart grids, and their combination drive the need

for new adaptive middleware solutions. Applying reflective techniques to open-up

the implementation of middleware and related software platforms for

interoperability, one-to-many deployment, and adaptability have proved

particularly successful and influential in the past. However, there are still

open challenges, such as scalability and decentralized management as well as

resilient real-time operations that require further investigation to address

new use cases in large deployment contexts.

Past editions of the workshop have brought together experts involved in

designing and reusing adaptive systems at different system layers, including

architectural, OS, virtualization technology, and network layers, as well as in

using adaptation techniques that are complementary to reflection. The workshop

series also seek to provide an exciting environment in which to leverage

cooperation among researchers.

Topics of interest include, but are not limited to:

\* Design and performance of adaptive and/or reflective middleware platforms

\* Experiences with adaptive and reflective technologies in specific domains

(e.g., sensor networks, ubiquitous/pervasive computing, mobile computing,

smart and connected communities, Internet of Things, cloud/grid computing,

P2P, Systems-of-Systems)

\* Cross-layer interactions and adaptation mechanisms, including network, OS, VM

& device level techniques

\* Adaptation and reflection in the presence of heterogeneous execution and

programming paradigms

\* Application of adaptive and reflective middleware techniques to achieve:

reconfigurability and/or adaptability and/or separation of concerns; reuse;

and reification of adaptation techniques and strategies

\* Incorporating non-functional properties into middleware, including real-time,

fault- tolerance, immutability, persistence, security, trust, privacy and so on

\* Fundamental developments in the theory and practice of reflection, adaptation

and control, as it relates to middleware and its interaction with other layers

\* Techniques to improve performance and/or scalability of adaptive and

reflective mechanisms

\* Evaluation methodologies for adaptive and reflective middleware; guidelines,

testbeds and benchmarks

\* Approaches to maintain the integrity of adaptive and reflective technologies;

convergence of adaptation

\* Tool support for adaptive and reflective middleware

\* Design and programming abstractions to manage the complexity of adaptive and

reflective mechanisms

\* Software engineering methodologies for the design and development of adaptive

middleware

\* Methods for reasoning, storing and dynamically updating knowledge about the

services provided by adaptive/reflective middleware

\* The role of techniques such as learning in the design of long-lived adaptive

middleware

\* Methods for asynchronous, distributed, control, coordination/cooperation among

components providing middleware services

\* Metrics on properties such as cost-of-adaptation, quality-of-adaptation,

consistency-of- adaptation, yields

Submission Guidelines

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All submissions should be made electronically through:

https://arm2019.hotcrp.com

Submitted and accepted papers should be no longer than 6 pages in the standard

ACM format for conference proceedings. Document templates for most popular

document processing tools can be found at:

http://www.acm.org/sigs/publications/proceedings-templates

At least one author on each accepted paper must hold a full pre-conference

registration. Papers will be available in the ACM Digital Library.

We will aim to create better outreach for the papers in ARM by selecting the

best papers from the workshop and inviting the authors of those papers to submit

an extended and expanded manuscript (40% new material will be required for the

extended manuscript) towards a publication in the SpringerNature Journal of

Internet Services and Applications.

Workshop Co-Chairs

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\* Paul Grace, Aston University, UK

\* Mohan Kumar, Rochester Institute of Technology, USA

\* Marco Netto, IBM Research, Brazil

Contact: mstelmar at br(dot)ibm(dot)com

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