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

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

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

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

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