DAGSTUHL
ARTIFACTS SERIES

Volume 5 | Issue 1 | July 2019

Special Issue of the 31st Euromicro Conference on Real-Time Systems (ECRTS 2019)

Edited by

Sophie Quinton
Sebastian Altmeyer
Alessandro Papadopoulos

ISSN 2509-8195

DARTS Special Issue Editors

Sophie Quinton
INRIA-Grenoble Rhône-Alpes,
France
sophie.quinton@inria.fr

Sebastian Altmeyer
University of Amsterdam, Amsterdam,
The Netherlands
altmeyer@uva.nl

Alessandro Papadopoulos
Mälardalen University (MDH), Västerås,
Sweden
alessandro.papadopoulos@mdh.se

ACM Classification 2012
Computer systems organization → Embedded and cyber-physical systems; Computer systems organization → Real-time systems; Software and its engineering → Real-time systems software; Software and its engineering → Real-time schedulability

Published online and open access by
Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing, Saarbrücken/Wadern, Germany.
Online available at
http://drops.dagstuhl.de/darts.

Publication date
July 2019

License
This work is licensed under a Creative Commons Attribution 3.0 Germany license (CC BY 3.0 DE): http://creativecommons.org/licenses/by/3.0/de/deed.en.

In brief, this license authorizes each and everybody to share (to copy, distribute and transmit) the work under the following conditions, without impairing or restricting the authors' moral rights:

- Attribution: The work must be attributed to its authors.

The copyright is retained by the corresponding authors.

Digital Object Identifier
10.4230/DARTS.5.1.0

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.

Contact
Schloss Dagstuhl – Leibniz-Zentrum für Informatik
DARTS, Editorial Office
Oktavie-Allee, 66687 Wadern, Germany
publishing@dagstuhl.de

http://www.dagstuhl.de/darts

Contents

Artifact Evaluation Process
. . . . . 0:vii

Artifact Evaluation Committee
. . . . . 0:ix

Artifacts

Dual Priority Scheduling is Not Optimal (Artifact)
Pontus Ekberg 1:1–1:2

`NPM-BUNDLE`: Non-Preemptive Multitask Scheduling for Jobs with `BUNDLE`-based Thread-Level Scheduling (Artifact)
Corey Tessler and Nathan Fisher 2:1–2:2

DMAC: Deadline-Miss-Aware Control (Artifact)
Paolo Pazzaglia, Claudio Mandrioli, Martina Maggio, and Anton Cervin 3:1–3:3

API comparison of CPU-to-GPU command offloading latency on embedded platforms (Artifact)
Roberto Cavicchioli, Nicola Capodieci, Marco Solieri, and Marko Bertogna 4:1–4:3

Response-Time Analysis of ROS 2 Processing Chains under Reservation-Based Scheduling (Artifact)
Daniel Casini, Tobias Blaß, Ingo Lütkebohle, and Björn B. Brandenburg 5:1–5:2

Scheduling Self-Suspending Tasks: New and Old Results (Artifact)
Jian-Jia Chen, Tobias Hahn, Ruben Hoeksma, Nicole Megow, and Georg von der Brüggen 6:1–6:3

Modeling Cache Coherence to Expose Interference (Artifact)
Nathanaël Sensfelder, Julien Brunel, and Claire Pagetti 7:1–7:2

Simultaneous Multithreading Applied to Real Time (Artifact)
Sims Hill Osborne, Joshua J. Bakita, and James H. Anderson 8:1–8:3

31st Euromicro Conference on Real-Time Systems (ECRTS 2019).
Editors: Sophie Quinton, Sebastian Altmeyer, and Alessandro Papadopoulos
Dagstuhl Artifacts Series
Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany

Artifact Evaluation Process

The ECRTS Artifact Evaluation (AE) process takes place after the paper decisions have been finalized. We seek to achieve the benefits of the AE process without disturbing the current process through which ECRTS has generate high-quality programs in the past. Therefore, the current submission, review and acceptance procedure are completely unaltered by the decision of running an AE process.

Once acceptance decisions are final, the authors of accepted papers are invited to submit an artifact evaluation (or replication) package. Hence, the repeatability evaluation process has no impact on whether a paper is accepted at ECRTS, and will be entirely optional and up to authors. Moreover, there is no disclosure of the title and authors of papers which would not pass the repeatability evaluation. This is to avoid negative bias towards submitting their artifact on the authors' part. Once authors that desire to do so have submitted their artifacts, an Artifact Evaluation Committee (AEC) composed mainly of PhD students close to graduation and postdocs evaluates the artifacts.

Artifacts should include two components:

- a document explaining how to use the artifact and which of the experiments presented in the paper are repeatable (with reference to specific digits, figures and tables in the paper), the system requirements and instructions for installing and using the artifact;
- the software and any accompanying data.

During the first week, all the evaluators check that they can run the code of artifacts assigned to them, without problems. In case of problems, these are promptly (and anonymously) reported to the authors of the artifact that can help fixing them. From that moment on, the evaluators have 3 weeks to complete their reviews. During the last week, a brief online discussion takes place if/when necessary and notifications are sent to authors.

31st Euromicro Conference on Real-Time Systems (ECRTS 2019).
Editors: Sophie Quinton, Sebastian Altmeyer, and Alessandro Papadopoulos
Dagstuhl Artifacts Series
Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany

Artifact Evaluation Committee

Muhammad Ali Awan
CISTER Research Unit, ISEP-IPP, Porto, Portugal
awa@isep.ipp.pt

Tobias Blaß
Robert Bosch GmbH, Germany
Tobias.Blass@de.bosch.com

Fabien Bouquillon
Université de Lille, France
fabien.bouquillon@univ-lille.fr

Lélio Brun
École normale supérieure / Inria, Paris, France
lelio.brun@inria.fr

Paolo Burgio
University of Modena and Reggio Emilia, Italy
paolo.burgio@unimore.it

Daniel Casini
Scuola Superiore Sant'Anna, Pisa, Italy
daniel.casini@sssup.it

Pierre-Julien Chaine
ONERA, Toulouse, France
pierre-julien.chaine@airbus.com

Xiaotian Dai
University of York, UK
xd656@york.ac.uk

Frédéric Fort
Université de Lille, France
frederic.fort@univ-lille.fr

Arpan Gujarati
Max Planck Institute for Software Systems (MPI-SWS), Kaiserslautern, Germany
arpanbg@mpi-sws.org

Paolo Pazzaglia
Scuola Superiore Sant'Anna, Pisa, Italy
paolo.pazzaglia@sssup.it

Julius Roeder
University of Amsterdam, The Netherlands
j.roeder@uva.nl

Helena Russello
Wageningen University, The Netherlands
helena.russello@wur.nl

Stefanos Skalistis
University of Rennes / IRISA, France
stefanos.skalistis@inria.fr

Aakash Soni
IRIT/ENSEEIHT/INP Toulouse, France
aakash.soni@irit.fr

31st Euromicro Conference on Real-Time Systems (ECRTS 2019).
Editors: Sophie Quinton, Sebastian Altmeyer, and Alessandro Papadopoulos
Dagstuhl Artifacts Series
Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany