Workshop on Tools and Concepts for Communication and Networked Systems (TCoNS)
Or: How to build resilient IoT Systems?

Co-located to the 50. GI-Jahrestagung INFORMATIK 2020,
September 29 - October 01 2020, Kongresszentrum Karlsruhe
http://comsys.ovgu.de/TCoNS

Call for papers

The Internet of Things (IoT) and related future networking concepts promise the ubiquitous availability of data. Applications can aggregate and evaluate relevant sets of data, and they can provide highly flexible, context-aware services, which can interact with each other and form a new type of emergent behaviour.

The first part of the story has already become reality. Sensors, aggregating current values as well as data storages providing, historical information emerge wildly around us in terms of computational capacity and data quantity. But did we already achieve the goals from an application and coordination point of view? Traditional system solutions simply use fixed firmware, whose data and control flows are statically configured. The IoT devices transmit their data periodically or event-driven to a database, that serves the requests of the applications. With embedded systems, this is made even more difficult by the fact that a statically linked firmware is used, so that the chance to receive function and security updates is low. It will no longer be valuable to restrict IoT systems to such static behavior, thus new methods, models, and algorithms are necessary to ensure functionality, resiliency, and security.

The workshop addresses current research related to the implementation and realization of future IoT applications and systems. Particular focus is put on concepts, tools, and the toolchain, that is required for this endeavor. Furthermore, flexible right management, capability and performance profiles and request evaluation for dynamically composed IoT settings will be targeted. We want to discuss how to realize abstract representations of these aspects to automatically react on adapted requests, changed network configurations, or system states.

Topics

- Networking concepts for IoT (B5G / 6G Upper Layer Concepts)
- Operating systems / Runtime environments / Virtual machine concepts
- Service description / Support for service migration in IoT
- Online verification and validation for resilience and secure services
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- Organic computing for resilient IoT
- Code adaptation in IoT applications
- DevOps, tools, and toolchains for IoT system development

Important dates

Paper submission: 15. April 2020
Acceptance notification: 09. June 2020
Camera ready paper submission: 30. June 2020
Conference date: 29. September - 1. October 2020

Submission guidelines

Contributions should follow the LNI paper template (see below) and should not extend 10 pages in total. Accepted papers will be published in the Lecture Notes in Informatics (LNI).

Papers can be submitted via Easychair:
https://easychair.org/my/conference?conf=tcons2020

Paper template: https://www.ctan.org/pkg/lni

TCoNS Venue

The TCoNS workshop will be held together with the 50th GI Jahrestagung (INFORMATIK2020) in Karlsruhe.

Address: Kongresszentrum Karlsruhe Festplatz 9, 76137 Karlsruhe, Germany

Organizers

- Mesut Günes, OVGU Magdeburg (chair)
- Sebastian Zug, TU Bergakademie Freiberg
- Sanaz Mostaghim, OVGU Magdeburg
- Matthias König, FH Bielefeld

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Communication and Networked Systems