2nd Workshop on “Tools and Concepts for Communication and Networked Systems” (TCoNS)

Or: How to Build Trustful IoT Systems

https://comsys.ovgu.de/TCoNS.html

Call for papers

Organizers

Prof. Dr. Mesut Güneş

Prof. Dr. Sebastian Zug

Prof. Dr. Matthias König

Important days

Paper submission:
9 January 2022
Acceptance notification:
13 February 2022
Camera ready:
27 February 2022

Please scan the QR code for more information

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 behavior.

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 in order 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 in order to automatically react to adapted requests, changed network configurations, or system states.

This workshop aims to bring together communication and networked systems researchers with a focus on IoT from academic and industry, who are interested in practical applications and systems design.

Topics include but are not limited to:

- 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
- Machine learning for resilient IoT
- Software patterns for IoT systems and applications
- DevOps, tools, and toolchains for IoT system development

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Co-located with the IEEE/IFIP Network Operations and Management Symposium (NOMS)
25-29 April 2022, Budapest, Hungary