

NCSIoT

Novel Cloud Approaches for Securing IoT Devices




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Cloud Computing 2020 – Nice, France






October 25, 2020 to October 29, 2020




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The proliferation of Internet of Things (IoT)-devices in society at large demands a renewed focus on securing and maintaining such systems. IoT-based systems are predicted to have a great impact on future business and the resilience of such systems must be guaranteed. This can be achieved by prevention, detection, response and mitigation of combined physical and cyber threats to IoT infrastructure.

The objective of the special track is to identify novel approaches for improving resilience in the evolving IoT domain. Such approaches can identify building blocks on a system or a device level. These building blocks can include intelligent security that actively and automatically adapts its own security. Introducing cryptographic-based building blocks that strive to ensure that distributed IoT networks remain in healthy condition throughout their lifecycle are of great importance. By supporting values of openness, automation, decentralization, inclusiveness and protection of privacy we can introduce novel means that reduces the threat of surveillance and theft, while also improving the level of trust for IoT technology.

- Introduction
Chairs
- A Study About the Different Categories of IoT in Scientific Publications
Sebastian Fischer, Katrin Neubauer and Rudolf Hackenberg
- Threat Analysis of Industrial Internet of Things Devices
Simon Liebl, Leah Lathrop, Ulrich Raithel, Matthias Söllner, and Andreas Aßmuth
- IoT Device Identification and Recognition (IoTAG)
Lukas Hinterberger, Sebastian Fischer, Bernhard Weber, Katrin Neubauer and Rudolf Hackenberg

- Development of a Process-oriented Framework for Security Assessment of Cyber Physical Systems

Katrin Neubauer, and Rudolf Hackenberg

- An IoT Crypto Gateway for Resource-Constrained IoT Devices

Ahmed Alqattaa, and Daniel Loebenberger

- Reliable Fleet Analytics for Edge IoT Solutions

Emmanuel Raj, Magnus Westerlund, and Leonardo Espinosa-Leal

- Securing the Internet of Things from the Bottom Up Using Physical Unclonable Functions
Leah Lathrop, Simon Liebl, Ulrich Raithel, Matthias Söllner, and Andreas Aßmuth
- Securing the Internet of Things from the Bottom Up Using an Immutable Blockchain-Based Secure Forensic Trail
Bob Duncan
- Open Discussion and Closing Remarks
Chairs (Moderators)