

**Title:**

Workshop on Information-Centric Networking (ICN) Solutions for the IoT based Applications (ICN-IoT).

Abstract:

Internet of Things (IoT) is gaining increasing attention that opens several opportunities for research and development. IoT networks are host-centric since an IP address characterizes each IoT device. However, host-centric communication has been stretched to its limits, and it is often unable to deal with issues such as reliability, variable network flow, scalability, dynamicity, and overheads. Due to such issues, host-centric communication is considered inadequate for IoT environments. Therefore, the research community is paying ever-increasing attention to an entirely new type of architecture, known as Information-Centric Network (ICN). Unlike host-centric communication, in ICN, each piece of information has a unique, persistent, location-independent name, directly used by applications for accessing data. Besides, ICN improves network performance by providing other features, such as caching, mobility, scalability, and robustness. ICN matches a broad set of information-centric IoT applications that manage data regardless of the identity of the object that stores or originates them. In recent years, a great effort has been devoted to the integration of IoT with the ICN communication model.

This workshop aims at providing a platform for academic, industrialist researchers and practitioners to exchange and publish the challenges, latest research trends, and results on Information-Centric Networking (ICN) for the IoT. Again, we encourage the submission of cutting edge approaches to transform the IoT as we know it today, into a more capable and tailored system for effective content distribution, according to today and tomorrow's needs.

Scope and Topics:

The topics relevant to this workshop include but are not limited to:

- ✧ ICN-based IoT with cloud computing
- ✧ ICN-based IoT with SDN
- ✧ ICN-based IoT with edge computing
- ✧ ICN-based IoT with fog computing
- ✧ ICN-based IoT with 5G network
- ✧ ICN-based solutions for Machine-to-Machine (M2M) technologies
- ✧ Data structures for Information-Centric IoT
- ✧ Cryptographic solutions for ICN-based IoT
- ✧ Publish-Subscribe techniques for Information-Centric IoT
- ✧ Intelligent solutions for device-to-device (D2D) caching networks
- ✧ Learning techniques for content distribution in Information-Centric IoT



- ✧ Optimization techniques for precedence-constrained tasks in Information-Centric IoT
- ✧ Energy-Efficient techniques for Caching Contents in Information-Centric IoT

The special track will also include:

A keynote speech was given by a renowned researcher on the topic of ICAIS 2021 Birds-of-a-feather discussions in groups aligned with the special track themes Poster/Work-in-progress papers.

Journal Publication: A selected set of top-quality papers may be invited to submit full papers to a special issue.

Best Paper: All the regular papers will be considered for the BEST PAPER AWARD.

Program Committee Chairs:

Honorary Chairs:

Prof. Dharma P. Agrawal, University of Cincinnati, USA.

Prof. Michael Sheng, Macquarie University, Australia

Prof. Amiya Nayak, Professor, University of Ottawa, Canada

Prof. Gregorio Martinez Perez, University of Murcia (UMU), Spain.

Prof. Francesco Palmieri, University of Salerno, Italy.

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E-mail: arcastiglione@unisa.it

Dr. B. B. Gupta, National Institute of Technology, Kurukshetra, India.

E-mail: gupta.brij@ieee.org

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Prof. Muhammad Khurram Khan, King Saud University, Riyadh, Kingdom of Saudi Arabia

Dr. Gianni D'Angelo, University of Salerno, Italy.

Prof. Shingo Yamaguchi, Yamaguchi University, Japan



Prof. Xinyi Huang, Fujian Normal University, Fuzhou, China.
Prof. Marek Ogiela, AGH University of Science and Technology, Krakow, Poland.
Prof. Andrew Ip, University of Saskatchewan, Canada
Prof. Florin Pop, University Politehnica of Bucharest, Bucharest, Romania.
Prof. Debiao He, Wuhan University, Wuhan, China.
Prof. Mauro Migliardi, University of Padova, Italy.
Dr. Alessio Merlo, University of Genova, Italy.
Prof. Elhadj Benkhelifa, Staffordshire University, UK
Prof. Xiaofeng Chen, Xidian University, China.
Dr. Imran Razzak, Deakin University, Australia
Dr. Chang Choi, Gachon University, Rep. of Korea
Dr Thar Baker, Liverpool John University (LJMU), UK
Dr. Weizhi Meng, Technical University of Denmark (DTU), Denmark.
Dr. Ugo Fiore, Parthenope University, Napoli, Italy.
Prof. Massimo Ficco, Campania University L. Vanvitelli, Italy.
Prof. Francesco Colace, University of Salerno, Italy.

Planned review procedures:

We will abide by the manuscript submission and review method and Due Dates set by ICAIS 2021. Three independent reviews of each paper by researchers of the respective field have no conflict of interest with the authors.

Planned format:

Keynote-1

Technical Session-1 Technical session -2

Birds of a Feather Discussion WIP/ Poster

Best paper and

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Duration of the special session: Half-day

Number of refereed papers: 15

Hot topic sessions: Birds of the Feather discussion on Information-Centric IoT

Keynote: 20-minute Keynote talk by renowned Researcher

Panels: We will have a panel discussion.

Equipment and space requirements: NA.

A rough estimate of the number of participants: 20

Information on previous editions:

The proposed workshop would be first in its series. However, organizers have past experiences conducting several successful workshops, symposia and special sessions in flagship conferences like IEEE INFOCOM, IEEE GLOBECOM, IEEE GCCE, IEEE SIGCOMM, etc.