



## Sustainable Communications for Renaissance

## Call for Papers

## Workshop on Architectural Innovations for 6G: Native-AI and Digital Twin

## SCOPE

With the accelerated development of digitalization and intelligentization of industries, especially the penetration of artificial intelligence (AI), 6G is considered to support native-AI and digital twin for new AI services and intelligent network autonomy. Toward this end, the 6G network architecture will not be session-oriented, but natively support the deep integration of information, communication, and data technologies (ICDT). Unlike 5G which applies AI technologies as a tool to optimize the traditional algorithms in a patch-on manner, 6G native-AI is deep integration with AI in architectural level for end-to-end AI learning and inference environment. Native-AI will provide the required real-time, trust-worthy, and green intelligent services and high-level network autonomy. Moreover, the digital twin is a real-time interactive mapping network system that is composed of physical network entities and their twin digital networks. Driven by AI technology, the digital twin contents of the network can be used to intelligently analyze, diagnose, simulate and control the physical network efficiently based on data and models. To rapidly promote future networks towards the full-intelligence and full-autonomy, academic and industrial researchers need to be in an effort to converge native-AI and digital twin to realize 6G vision like pervasive intelligence. Hence, this workshop aims to bring together researchers and experts from academia and industry to consider native-AI and digital twin opportunities to enhance ICDT Integrated 6G Networks by considering the aforementioned challenges.

## TOPICS OF INTEREST

We seek original completed and unpublished work not currently under review by any other journal/magazine/conference. Topics of interest include, but are not limited to:

- Network architecture design paradigm shift for 6G native-AI and digital twin
- 6G native-AI architecture and key technologies
- Digital twin network architecture and key technologies
- Integration of AI and digital twin
- AI-driven digital twins in future communications and networking
- Communication-computation integrated architecture for 6G
- AI as a service and quality of AI service
- AI models and algorithms for wireless communications
- AI explainable and trust-worthy for 6G
- Energy-efficient end-to-end AI computing towards green 6G
- Resource allocation/management and QoS/QoE improvement for digital twin empowered 6G
- Lite network protocols and technologies
- Modeling, performance analysis and optimization of native-AI and digital twin for 6G
- Testbeds and prototypes of native-AI and digital twin enabled wireless services and applications

## PAPER SUBMISSION

All papers for Workshops should be submitted via EDAS.

Full instructions on how to submit papers are provided on the IEEE ICC 2023 website:

<https://icc2023.ieee-icc.org/>

## WORKSHOP CO-CHAIRS

**Guangyi Liu**

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## STEERING COMMITTEE

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## IMPORTANT DATES

**Paper Submission Deadline:**

20 January 2023

**Paper Acceptance Notification:**

6 March 2023

**Camera Ready and Registration for**

**accepted papers:**

15 March 2023

## WEBPAGE LINK

[icc2023.ieee-icc.org](https://icc2023.ieee-icc.org)