Workshop on Data Driven and AI-Enabled Digital Twin Network and Applications (SmarTWIN)

General Chairs

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Keynote Speaker

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SCOPE

The next generation technologies is envisioned to connect the physical and digital worlds. In this regard, Digital Twins (DT) is an emerging technology that has taken the world by storm due to its multiple benefits and deployment in interdisciplinary applications ranging from real-time remote monitoring to healthcare, industrial control systems and predictive maintenance in aerospace. DT connects the physical and digital worlds by building an accurate virtual replica of system objects in real-time. Real-time network monitoring, performance testing, optimization, and fast simulation are some examples that exploit DT advantages in the communication domain and beyond. DT delivers a new generation platform to analyze and test complex systems that is not currently available in traditional simulations and evaluations. Therefore, the use of DT is required in communication systems. Further, DT can deliver seamless analysis, monitoring, and predictions between digital and virtual counterparts of real-world systems, when it is used together with next-generation mobile communications (5G/6G), Virtual Reality (VR), Internet of Things (IoT), Artificial Intelligence (AI), Transfer Learning (TL), 3D models, Augmented Reality (AR), distributed computing and intelligent health applications.

IMPORTANT DATES:

Paper Submission Deadline: 19 March (Final&Firm Deadline)
Paper Acceptance Notification: 14 April 2023
Camera Ready and Registration for Accepted Papers: 28 April 2023

SUBMISSION:

Papers must be formatted according to the instructions in the ICASSP 2023 Paper Submission Guidelines. Also, please take care to read the Conference Policies from the IEEE Signal Processing Society!

Link: https://cmt3.research.microsoft.com/ICASSP2023/Track/48/Submission/Create

TOPICS OF INTEREST: The workshop will invite authors to submit papers presenting new research related to all aspects of DT networks, systems and applications. Topics of interest include, but are not limited to:

- Data-driven and IoT-based DT networks for real-time communication systems
- Real-time communication protocols for DT networks
- DT-enabled health applications
- Wireless communications for cyber-physical DT applications
- DT-assisted generative adversarial network (GAN) and software defined networks (SDN)
- Joint communications and control design and optimization of DT
- New security and privacy concepts within DT
- Trustworthy AI enabled DT applications
- DT-assisted AI applications for smart cities
- Communications protocols for enabling DT deployment in real-world applications
- AI applications of DT systems
- Autonomous and context-aware DT
- Self-organizing DT-enabled IoT systems and applications
- Sustainable AI and DT based approaches
- DT in Edge/Fog/Cloud Computing
- DT for enhanced Mobile Broadband (eMBB), massive Machine Type Communications (mMTC), and Ultra Reliable Low Latency Communications (URLLC) applications
- DT for resource management and network optimization
- Connected networking systems for environmental sensing
- DT for precision agriculture, smart city and industry 4.0 applications
- Real-world DT simulations, prototypes, and testbed demonstrations

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