Integrating Sensing, Communication and Computing (ISCC) for Next-Generation Metaverse

The Metaverse, a dynamic virtual space, is set to transform user interaction through the integration of sensing, communication, and computing. This workshop explores the Integrating Sensing, Communication, and Computing (ISCC) framework, crucial for merging the digital with the physical and enhancing virtual realism and immersion. This work discusses how ISCC helps overcome challenges in scalability, security, and real-time processing, and supports seamless, immersive experiences. The main goal of the project is to explore ISCC's role in advancing interactivity within the Metaverse, focusing on creating standards, improving security, promoting sustainability, and enhancing human-computer interaction.

Workshop objectives:

- Interoperability and Standardization: Creating universal standards for ISCC integration to ensure seamless operation across the different platforms and devices within the Metaverse.
- Privacy and Data Security in Integrated Systems: Assessing the implications of pervasive sensing and computing on user privacy, and developing robust security protocols to protect user data.
- Sustainable ISCC Practices: Investigating energy-efficient practices in ISCC applications to promote sustainability in the rapidly expanding infrastructure of the Metaverse.
- Human-Computer Interaction (HCI) in Virtual Realities: Exploring how HCI can be enhanced by ISCC to create more intuitive and natural user interfaces and experiences in the Metaverse.

Workshop Organizers:

Yulan Gao, yulang@kth.se, a Postdoc at the Division of Information Science and Engineering, KTH Royal Institute of Technology, Sweden

Chao Ren, chaor@kth.se, a Principal Investigator, Presidential Postdoctoral Fellow at the Division of Information Science and Engineering, KTH Royal Institute of Technology, Sweden

Ran Wang, wangran@nuaa.edu.cn, an Associate Professor at the School of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics, China

Manuscript Submission Deadline: 31 October 2024