IEEE Transactions on Consumer Electronics

Call for Papers

Special Section on "Digital Twin and Metaverse for Consumer Health (MCH)"

Theme:

The metaverse in consumer health (MCH) is expected to revolutionize the healthcare ecosystem by providing a range of health services with an immersive experience. The metaverse seeks to blend the distinction between the physical and digital worlds. The consumer health metaverse mainly relies on extended reality (XR), Consumer Internet of Things (CIoT), AI, Digital Twin (DT), Blockchain, and other consumer electronics technologies and devices to reach this purpose. By creating a digital twin (DT) of a hospital, clinic, or even a patient, these convergent technologies and digital consumer devices can form the foundation of MCH and improve the quality of healthcare and wellness with an immersive user/consumer experience. Meanwhile, these wide ranges of converging technologies in MCH pose several challenges such as how to assure the security, accessibility, and privacy of the consumer while capturing, processing, and visualizing consumer health data; how to design, develop and deploy metaverse in the consumer health ecosystem effectively and efficiently? How the potential of DT-enabled health data can provide exciting and meaningful insights to researchers for new opportunities in this consumer health metaverse? How to measure consumer interaction to create a multimodal and seamless patient experience in different consumer health and wellness settings? This special issue will bring together academic and industrial researchers to solicit original and high-quality works on recent advances in underlying consumer electronics technologies, novel ideas, theoretical frameworks, real-world implementations, and emerging applications for the healthcare metaverse.

Topics of interest in this Special Section include (but are not limited to):

- DT-empowered Metaverse consumer health applications
- AI-empowered consumer health ecosystem in Metaverse
- Emerging consumer electronics technologies and applications for Healthcare Metaverse
- XR for consumer health Metaverse applications
- Convergence of AI and DT on handling multimodal medical data in MCH
- DT-based consumer health care using Web 3.0
- Novel Metaverse-related consumer electronics technologies to improve the healthcare system
- Blockchain-enabled consumer health metaverse: Experimental Prototyping and Testbed
- Quality of user experience in consumer technologies enabling health metaverse uses cases in different healthcare domains/settings
- Security, Privacy, and Trust for MCH
- New opportunities, challenges, case studies, architectures, and theoretical frameworks for MCH

Important dates:

- End of submission of Manuscripts: 30 October 2023
- Expected publication date (tentative): 3rd Quarter 2024

Guest Editors:

- M. Shamim Hossain, King Saud University, KSA, mshossain@ksu.edu.sa
- Diana P. Tobón, Universidad de Medellín, Colombia, dtobon@udem.edu.co
- Dr. Josu Bilbao, Data Analytics and AI Unit, IKERLAN, Spain, JBilbao@ikerlan.es
- Abdulmotaleb El Saddik, University of Ottawa, Canada, elsaddik@uottawa.ca

Instructions for authors:

Manuscripts should be prepared following guidelines at: https://ctsoc.ieee.org/publications/ieee-transactions-on-

consumer-electronics.html and must be submitted online following the IEEE Transactions on Consumer Electronics instructions: https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html. During submission, the Special Section on "Digital Twin and Metaverse for Consumer Health (MCH)" should be selected.

Editor-in-Chief: Dr. Kim Fung Tsang   kf.tce.eic@gmail.com