

Consumer Tech Opportunities and Challenges in the Metaverse

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■ **I WELCOME THE** readers to the third issue of the year 2024, the May/June issue of the *IEEE Consumer Electronics Magazine (MCE)*.

CONSUMER TECH OPPORTUNITIES AND CHALLENGES IN THE METAVERSE

The Metaverse is a virtual-shared space surrounding the entirety of virtual and augmented reality experiences, providing a persistent and immersive environment, where users can interact with each other and consumer tech devices in real time. Consumer technologies emerge as essential not only for success, but also for the widespread adoption of the broadly recognized scope of the Metaverse, as discussed in the current issue of *MCE*. Crucial aspects, such as accessibility, device ergonomics, and ease of use, play a pivotal role in facilitating users' seamless immersion into digital environments. Besides, this issue also aims to foster the dissemination of challenges in networking, security, and user experience, which are imperative for enabling smooth interactions among millions of users within the shared Metaverse space. In addition, it is my pleasure to provide practitioners and researchers with high-quality, state-of-the-art articles dedicated to consumer

technology solutions for emerging issues related to data privacy, authentication, ethics, social aspects, sustainability, and different applications in the context of Metaverse.

FEATURE ARTICLE

The Integration of ChatGPT With the Metaverse for Medical Consultations: Recent years have witnessed a promising synergy between healthcare and the Metaverse, leading to the development of virtual healthcare environments. By integrating the cutting-edge language model, such as the ChatGPT of OpenAI, with the Metaverse for medical purposes, researchers can revolutionize healthcare delivery, enhance access to care, and increase patient engagement. This article proposes a new medical Metaverse model utilizing GPT-4 as a content creator, highlighting its potential, addressing challenges and limitations, and exploring various application fields. The authors outline their efforts to transform the introduced concept into a practical reality.

Consumer Electronics Technologies for Enabling an Immersive Metaverse Experience: The idea of the Metaverse as a virtual reality space where people can interact with computer-generated surroundings and each other in real time is gaining attention as this technology is roaring. In this article, the authors review several applications of consumer electronics (CE) technology in the Metaverse, two case studies of

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consumer electronics in the Metaverse, several challenges in the existing CE technology in adapting it to the Metaverse, and some future directions for research. CE technology's impact on education and healthcare in the Metaverse is also analyzed. The article presents the ongoing efforts to enhance CE devices and the overall experience in the Metaverse.

SPECIAL SECTION

This Special Section on Metaverse and eXtended uniVerse (XV): Opportunities and Challenges for Consumer Technologies presents the selected set of articles to cover the scope. I would like to thank the Guest Editors, Professors Abdulmoteleb El Saddik, Fabrizio Lamberti, Steve Mann, Filippo Gabriele Praticò, Ruck Thawonmas, and Yu Yuan, for all their sincere effort and hard work for this strong Special Section which will be excellent reading for the readers of the *MCE* as well as the researchers around the globe.

LOOKING FORWARD

I hope that the current issue becomes a good read for a broader set of the Consumer Technology community to advance their knowledge. *MCE* will continue the trend of covering more themes for enthusiastic and dedicated readers in future issues on the current and emerging topics with the active support from the editorial board members, reviewers, and authors worldwide.

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