IEEE Transactions on Consumer Electronics

Call for Papers

Special Section on "AI-Generated Content Empowered Healthcare Electronics"

Theme:

The popularity of ChatGPT has shown tremendous potentials of AI-Generated Content (AIGC), which has posed a significant impact on the AI community and leads to the rethinking of the possibilities of general artificial intelligence. The AIGC not only creates high-quality text, graphics, and videos in a matter of seconds, but also engages customers in human-like conversation such as customer-service chatbots or fictional characters in video games. The AIGC has also shown great potentials for driving the healthcare electronics (HE). That is because the HE's typical tasks such as automatic diagnosis, healthcare prediction, medical record output, electronic health records, fusion of multi-model medical information, are essentially AIGC problems and thus perfect match the advantages of AIGC. Some attempts have been performed to exploit AIGC for the healthcare consumer data analytics, however, new engineering challenges emerge in applying AIGC for HE, such as cross-model data analysis, fusion of text and electronic signals, multi-source data heterogeneity, information security, and privacy preserving. Promising solutions are in high demand to fully exploit the potentials of AIGC for HE. This Special Section of the IEEE Transactions on Consumer Electronics (TCE) will focus on innovative studies which are powerful for promoting AIGC in consumer electronics. The rise of AI-Generated Content (AIGC) offers transformative potential in Consumer Electronics/Technologies (CE/CT), especially in enhancing consumer experiences and healthcare applications. Despite promising synergies, research gaps and challenges exist, such as specialized algorithms, data security, and privacy. AIGC could significantly impact sectors like telemedicine, smart homes, and entertainment, but overcoming these hurdles is essential for full-scale implementation. AIGC has evolved from basic text chatbots to complex systems handling text, images, and videos, finding key applications in healthcare education. While promising, its full adoption faces challenges such as data integration, security, and privacy concerns. The technology aims to automate tasks like diagnosis and manage extensive medical records, but gaps remain in handling multi-modal data and ensuring information safety. Research and industry are aligned in exploring its potential, making it a growing field ripe for innovation.

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

- Novel AIGC algorithms
- AIGC for medical image processing
- AIGC-based synthetic electronic health records
- AIGC-inspired electronic health records processing
- AIGC for healthcare information fusion
- Data augmentation with AIGC solutions
- Security and privacy in the AIGC
- AIGC for smart healthcare treatments
- Health assessment in the AIGC-based data generation
- AIGC for automotive HE applications

Important dates:

- End of submission of Manuscripts: March 31, 2024
- Expected publication date (tentative): 4th quarter 2023

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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 "**AI-Generated Content Empowered Healthcare Electronics**" should be selected.