Call for Papers

IEEE Transactions on Circuits and Systems for Video Technology

Special Issue on AI-Generated Content for Multimedia

Summary

With the rapid development of deep learning technology, artificial intelligence-generated content (AIGC) has emerged as a popular area of research in multimedia signal processing, computer vision, and machine learning, with many potential applications, such as dialog generation, text-to-speech conversion, image generation, video generation, and cross-modal generation between audio, video and text. As representative examples of AIGC technology, large-scale models such as ChatGPT, DALL-E and AudioLDM have attracted great attention in their respective fields, which leverage the success of a variety of methods, such as generating adversarial network (GAN), diffusion model, pre-training, and other machine learning approaches. Facilitated by AI algorithms, AIGC can be used to create personalized and unique content at scale, which can be particularly useful in industries such as entertainment, marketing, advertising, transportation, digital media, virtual and augmented reality, among many others. In addition, AIGC can improve accessibility and inclusivity in content creation, making it easier for individuals with disabilities to access and engage with content. It is undeniable that AIGC is gradually changing our lives.

However, the quality of AIGC still needs to be improved, which is not yet at the same level as humans in several fields, such as music generation. Meanwhile, the emergence of AIGC also raises important ethical and legal issues. The ownership of content created by AI algorithms, the applicability of copyright laws to AIGC, and the need to prevent bias or discrimination in AIGC are important issues that need to be addressed. Moreover, how to identify whether the content is created by AI is an urgent problem to be solved.

This special issue aims at exploring the implications of AIGC in various industries and applications. We welcome submissions that examine the technical challenges and opportunities of AIGC, as well as the ethical and legal implications of using this technology. We also encourage submissions that explore the potential of AIGC for improving accessibility and inclusivity in content creation.

Scope

This special issue seeks original contributions from, but not limited to, the following topics:

- Technical advances in AIGC, including image generation, video generation, audio-

visual learning and other multimedia algorithms.

- Applications of AIGC in various industries and applications, such as multimedia marketing, advertising, journalism, entertainment and transportation.
- The forgery detection and quality evaluation of AIGC, such as fake facial image detection and deepfake video detection.
- The ethical and legal implications of using AIGC, including issues of ownership, authorship, and accountability.
- The potential of AIGC for improving accessibility and inclusivity in image, video, and multimedia content creation.
- The technical challenges and opportunities of AIGC, including issues related to data privacy, bias, and explainability.
- The role of AIGC in shaping public opinion and influencing decision making, such as celebrity fake video generation.
- The future of AIGC and its potential impact on society.

Important Dates:

Open for submissions: March 6, 2023
Submissions due: June 1, 2023
Preliminary notification: Aug. 10, 2023
Revisions due: Sept. 1, 2023
Notification: Oct. 1, 2023
Final manuscripts due: Nov.1, 2023
Publication (tentative): Dec. 30, 2023

Guest Editors:

Dr. Shengxi Li, Professor, Beihang University, China (email: LiShengxi@buaa.edu.cn)
Dr. Xuelong Li, Professor, Northwestern Polytechnical University, China (email: li@nwpu.edu.cn)
Dr. Leonardo Chiariglione, CEDEO.net, Italy (email: leonardo@chiariglione.org)
Dr. Jiebo Luo, Professor, University of Rochester, USA (email: jluo@cs.rochester.edu)
Dr. Wenwu Wang, Professor, University of Surrey, UK (email: w.wang@surrey.ac.uk)
Dr. Zhengyuan Yang, Senior Researcher, Microsoft, USA (email: zhengyuan.yang13@gmail.com)
Dr. Danilo Mandic, Professor, Imperial College, London, UK (email: d.mandic@imperial.ac.uk)
Dr. Hamido Fujita, Professor, Iwate Prefectural University, Japan (email: h.fujita@hutech.edu.vn)