Special Issue

Recent Advances in Scene Reconstruction, Simulation, and Generation

Message from the Guest Editors

Scene reconstruction, simulation, and generation represent three deeply interconnected pillars of modern 3D computer vision. Together, they form the foundation for digitizing, understanding, and synthesizing the visual world. They are critical to applications ranging from autonomous driving and robotics to immersive media, urban planning, and scientific discovery.

In recent years, scene reconstruction has undergone a paradigm shift driven by neural scene representations. Methods such as Neural Radiance Fields (NeRF) and 3D Gaussian Splatting have demonstrated remarkable ability to recover high-fidelity geometry and appearance from sparse or unstructured image collections, enabling photorealistic novel view synthesis and dense 3D modeling at unprecedented quality and speed. These advances have redefined what is achievable in digital reconstruction and opened new possibilities for large-scale, real-time, and dynamic scene capture.

Guest Editors

Dr. Dan Wang
Department of Computer Science and Engineering, University of California, San Diego, CA 92093-0404, USA
Dr. Xinrui Cui
Department of Computer Science and Engineering, The University of North Texas, Denton, TX 76205, USA

Deadline for manuscript submissions

31 January 2027

Journal of Imaging

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 6.7
Indexed in PubMed

mdpi.com/si/275404

Journal of Imaging
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
jimaging@mdpi.com

mdpi.com/journal/jimaging

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Message from the Editor-in-Chief

The imaging term, specific with journal, is to be considered in its broadest sense. Image processing, image understanding and computer vision are all terms related to imaging acquisition, its processing and the extraction of relevant information from the scene to obtain the underlying knowledge. All tasks related to the above items are oriented toward specific applications in a broad range of areas and topics. The *Journal of Imaging* is conceived as an efficient vehicle in the scientific community for the communication and transmission of the progress and research results in the topics covered.

Editor-in-Chief

Prof. Dr. Raimondo Schettini
Department of Informatics, Systems and Communication, University of Milano-Bicocca, viale Sarca, 336, 20126 Milano, Italy

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