

Special Issue

Computer Vision Based on Generative AI Models

Message from the Guest Editors

Recent advances in generative AI models, particularly diffusion models, generative adversarial networks (GANs), and large vision-language models (VLMs), have significantly reshaped the landscape of computer vision. Unlike traditional discriminative approaches, generative models enable data synthesis, image-to-image translation, 3D reconstruction, scene simulation, and cross-modal understanding. This opens transformative opportunities in applications ranging from medical imaging and remote sensing to autonomous driving, surveillance, and digital twin systems. Despite these advances, many challenges remain. Key open problems include improving model efficiency and interpretability, addressing domain adaptation and bias, enhancing robustness under real-world constraints (e.g., low-light conditions, occlusions, or adverse weather), and ensuring trustworthy AI governance. This Special Issue aims to bring together cutting-edge contributions that explore how generative AI models can push forward the boundaries of computer vision in theory, algorithms, and applications.

Guest Editors

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

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