Special Issue

AI-Driven Image Processing: Theory, Methods, and Applications

Message from the Guest Editors

This Special Issue aims to explore the transformative role of artificial intelligence (AI) in advancing image processing across theoretical, methodological, and applied domains. Rapid advancements in AI, particularly in deep learning, generative models, and computer vision, have revolutionized traditional image processing paradigms, enabling unprecedented accuracy, efficiency, and scalability. This issue seeks to showcase cutting-edge research addressing fundamental challenges The scope encompasses three core themes. Theory focuses on foundational AI frameworks, including novel architectures, learning paradigms, and theoretical insights into model generalization and adversarial robustness. Methods emphasize algorithmic innovations, such as lightweight models for edge computing, federated learning for privacy preservation, and multimodal fusion techniques. Submissions may also address dataset curation, ethical AI practices, and evaluation metrics tailored to diverse imaging contexts. Applications highlight AI-driven breakthroughs in domains like medical imaging, autonomous systems, environmental monitoring, and creative industries.

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Message from the Editor-in-Chief

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