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Special Session Chairs:

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Special session title:

Generative AI in Image Processing and Computer Vision: Trends, Techniques, and Applications

Brief description of the proposed topic (150-300 words):

Generative AI has emerged as a transformative force in the fields of image processing and computer vision, reshaping how machines perceive, generate, and manipulate visual content. This special session aims to explore the latest advancements, methodologies, and real-world applications of generative AI models—such as Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), diffusion models, and transformers—in solving complex vision tasks. Key focus areas include image synthesis, super-resolution, style transfer, image inpainting, 3D reconstruction, and video generation. The session will also cover cutting-edge techniques for data augmentation, medical image analysis, satellite imagery enhancement, and domain adaptation using generative models. Special attention will be given to the integration of generative models with traditional vision pipelines and deep learning frameworks to improve robustness, interpretability, and performance. As these models continue to evolve, so do the ethical, security, and bias-related concerns they raise. Hence, the session also welcomes discussions around responsible AI, adversarial robustness, and model explainability in generative image systems. This session invites researchers, practitioners, and industry experts to share their insights, showcase innovations, and foster collaborations that push the boundaries of what's possible in image processing and computer vision using generative AI. Submissions focusing on novel algorithms, theoretical advancements, benchmark evaluations, and cross-disciplinary applications are particularly encouraged.

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