

Title of the Special Session:

Generative Models in Image Processing (GMIP 2023)

Abstract: Generative models are powerful means of learning techniques that are used to learn the underlying distribution of features in datasets and produce representation or abstraction of observed phenomena in unsupervised manner. Generative models are successfully applied in major image processing areas and achieved tremendous performance with state-of-the-art results. Many of such high performance applications like text to image translation, face frontal view generation, new pose generation, 3D view generation, face aging estimation, increasing image resolution, photo inpainting, clothing translation and video prediction are deployed in real life scenarios where end-to-end paradigms are paramount important. Generative models have found numerous applications in image processing. Some of the prominent applications include: image synthesis where generative models are used to generate realistic images from random noise or latent vectors; image super-resolution where generative models are used to enhance the resolution and quality of low-resolution images; image inpainting where generative models are used to fill in missing or corrupted parts of an image; image style transfer where generative models are used to transfer the style of one image to another while preserving the content; image translation where generative models are used to translate images from one domain to another; image editing and manipulation where generative models can assist in image editing tasks and image compression where generative models can be employed for efficient image compression. These are just a few examples of how generative models are applied in image processing. The field is rapidly evolving, and new techniques are being developed, leading to exciting advancements in the generation, manipulation, and understanding of images.

The objective of this special session is to provide a vibrant platform for students, researchers and technologists to present and share their novel ideas and works in relevant areas. Contributions welcome on the topics of interest include but are not limited to

- Image editing and manipulation
- Text to image conversion
- Image to text conversion
- Image translation
- Human pose estimation
- Image super-resolution
- Image inpainting
- Clothing translation
- 2D to 3D image conversion
- Video prediction and generation
- Video generation from texts
- Biometrics
- Machine translation
- Speech synthesis
- Face frontalization
- Medical imaging
- Public healthcare
- Scene customization

Special Session Organizer:

Dr. Dakshina Ranjan Kisku

Associate Professor

National Institute of Technology Durgapur,

Durgapur – 713209, West Bengal, India

Email: drkisku@cse.nitdgp.ac.in

Biography: Dakshina Ranjan Kisku is currently an Associate Professor in the Department of Computer Science and Engineering at National Institute of Technology Durgapur, India. He received his BCSE, MCSE and Ph.D. (Engineering) degrees in Computer Science and Engineering from Jadavpur University, India. Dr. Kisku is an active researcher in the areas of biometrics, image processing, computer vision, machine learning, deep learning, and NLP. He was a Researcher in the Computer Vision Lab at the University of Sassari, Italy from March 2006 to March 2007. Prior to that, he was a Project Associate in Biometrics and Computer Vision Lab at the Indian Institute of Technology Kanpur, India. He was a Postdoctoral Scientist in the Signal Processing Laboratory at Bahcesehir University, Turkey in 2012. Prior to joining NIT Durgapur, he worked as a faculty member for several years at Asansol Engineering College, India and Dr. B. C. Roy Engineering College, India. Dr. Kisku has more than 120 scientific publications to his credit, published in refereed conferences, journals, and edited books. He has co-authored and edited three books on biometrics and homeland security, and one book on medical biometrics. He has published two patents in the area of Public Healthcare. He is a recipient of IEI Young Engineers Award, IEI Excellence Award, Outstanding Scientist Award, Outstanding Reviewers Awards, IEEE Travel Award, IAPR Endorsement Scholarship, MIUR Research Fellowship, TUBITAK Postdoctoral Fellowship, Visvesvaraya Fellowship and many other accolades. Dr. Kisku is a Fellow of RSPH, UK, Fellow of The Institution of Engineers (India) and Senior Member of IEEE (USA). He regularly serves as a member of technical committee for many conferences and also reviewer for many refereed journals, conferences and books.