

**Special Session on**  
**Advancements and Applications of Machine Learning and Image Processing in**  
**Intelligent Systems**  
**in conjunction with**  
**23rd International Conference on Intelligent Systems Design and Applications (ISDA)**  
**December 11-13, 2023**  
**Website: <http://www.mirlabs.org/isda23>**

**Hybrid Mode – Online & Offline**  
**Onsite Venues: <http://mirlabs.org/isda23/venue2.php>**

### **Objectives and Scope**

The goal of this special session is to give experts in the fields of machine learning and image processing a chance to share what they've learned and get feedback from others. Collaboration and new ideas are what this workshop is all about. The special session covers a broad variety of issues concerning intelligent systems and their many implementations. New developments in deep learning architectures, transfer learning, generative adversarial networks, and other machine learning methods are discussed, with an emphasis on how they might be applied to image processing problems. In addition to discussing recent developments in image enhancement and restoration, this presentation also delves into real-time applications, medical image analysis, remote sensing, ethical implications, and more. The objective is to encourage cross-disciplinary dialogue about intelligent systems and image processing by facilitating the sharing of information and expertise among researchers, academia, and professionals from the industry. It provides a platform to researchers to present cutting-edge research and findings in the fields of machine learning and image processing; highlight current trends and future directions; and discuss the ramifications of these developments.

### **Subtopics**

The topics include, but are not limited to:

- Deep Learning Architectures
- Transfer Learning
- Generative Adversarial Networks (GANs)
- Explainable AI in Image Processing
- Image Super-Resolution
- Medical Image Analysis
- Real-time Image Processing
- Attention Mechanisms
- Image and Video Captioning

- Ethical Considerations
- Anomaly Detection in Images
- Image Segmentation
- Remote Sensing and Satellite Image Analysis
- Image Enhancement and Restoration
- Domain Adaptation and Generalization

### **Paper publications**

- Proceedings will be published in Lecture Notes in Networks and Systems, Springer (<https://www.springer.com/series/15179>)
- Indexed by SCOPUS, INSPEC, WTI Frankfurt eG, zbMATH, SCImago
- Paper maximum length is 10 pages
- Papers must be formatted according to Springer format (Latex/word) available at: <https://www.springer.com/de/authors-editors/book-authors-editors/manuscript-preparation/5636#c3324>
- Submission Link: <https://cmt3.research.microsoft.com/ISDA2023>

### **Important Dates**

Paper submission due: **September 30, 2023**

Notification of paper acceptance: **October 31, 2023**

Registration and Final manuscript due: **November 10, 2023**

Conference Date: **December 13-15, 2023**

### **Special Session Chairs**

- **Dr. Bhawna Goyal**, Chandigarh University, Mohali, India
- **Dr. Ayush Dogra**, Chitkara University, India
- **Dr. Jasgurpeet Singh Chohan**, Chandigarh University, Mohali, India
- **Dr. Ajith Abraham**, MIR Labs USA

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