

# ICIITCEE-2023

## BNM Institute of Technology, Bengaluru

27th -28th Jan 2023

### \*\*\*\*\* Special Session Proposal \*\*\*\*\*

#### TITLE OF THE SESSION

Recent Trends in Image Processing, Pattern Recognition and Computer vision

#### SESSION ORGANIZERS:

Dr.M.K. Vidhyalakshmi, Assistant Professor, Department of Computer Science and Engineering  
School of Computing, Bharath Institute of Higher Education and Research (BIHER), Chennai.

Dr. Bhuvana Suganthi D, Associate Professor, Department of ECE, BNM Institute of Technology,  
Bengaluru.

#### OBJECTIVE OF THE SPECIAL SESSION:

We provide a platform to the academicians, students, researchers and professionals to share the recent developments in the field Image Processing, Pattern Recognition and Computer vision. Each of these three sectors has seen a major increase in attention recently, driven by Big Data and Data Analytic activities. These field have its wide applications in such as video processing; image and signal processing; segmentation, retrieval, captioning, computational biology, biometrics, biomedical imaging, robotics, Self-driving cars, facial recognition etc., We provide opportunity to the research community to discuss in the broad areas of Image Processing, Pattern Recognition and Computer Vision related fields to promote community-wide discussion of ideas that will influence the continued research and promote collaborative research and developmental activities in the field.

#### TOPICS OF THE SPECIAL SESSION:

The main objective of this special session is to present the research from the of field of Image Processing, Pattern Recognition and Computer vision. This special session provides a platform for researchers and scientists across the world to exchange and share their experiences and research results.

#### AREAS OF COVERAGE (SUB-THEMES) : (But not limited To )

**IMAGE PROCESSING:** (Addresses low-level processing as well as imaging fundamentals.)

- Software Tools for Imaging
- Image Generation, Acquisition, and Processing
- Image-based Modeling and Algorithms

- Mathematical Morphology
- Image Geometry and Multi-view Geometry
- 3D Imaging
- Novel Noise Reduction Algorithms
- Image Restoration
- Enhancement Techniques
- Segmentation Techniques
- Motion and Tracking Algorithms and Applications
- Watermarking Methods and Protection + Wavelet Methods
- Image Data Structures and Databases
- Image Compression, Coding, and Encryption
- Video Analysis
- Multi-resolution Imaging Techniques
- Performance Analysis and Evaluation
- Multimedia Systems and Applications
- Novel Image Processing Applications

**COMPUTER VISION:** (Addresses mid- to high-level processing as well as vision fundamentals.)

- Camera Networks and Vision
- Sensors and Early Vision
- Machine Learning Technologies for Vision
- Image Feature Extraction
- Cognitive and Biologically Inspired Vision
- Object Recognition
- Soft Computing Methods in Image Processing and Vision
- Stereo Vision
- Active and Robot Vision
- Face and Gesture Recognition
- Fuzzy and Neural Techniques in Vision
- Medical Image Processing and Analysis
- Novel Document Image Understanding Techniques
- Special-purpose Machine Architectures for Vision

- Biometric Authentication
- Novel Vision Application and Case Studies

**PATTERN RECOGNITION:** (Addresses pattern recognition algorithms and methodologies that are of value to the image processing and computer vision research communities.)

- Supervised and Un-supervised Classification Algorithms
- Clustering Techniques
- Dimensionality Reduction Methods in Pattern Recognition
- Symbolic Learning
- Ensemble Learning Algorithms
- Parsing Algorithms
- Bayesian Methods in Pattern Recognition and Matching
- Statistical Pattern Recognition
- Invariance in Pattern Recognition
- Knowledge-based Recognition
- Structural and Syntactic Pattern Recognition
- Applications Including: Security, Medicine, Robotic, GIS, Remote Sensing, Industrial Inspection, Nondestructive Evaluation (or NDE), ...
- Case studies and Emerging technologies