

## PReMI'23: PROGRAM AT A GLANCE

**Pre-Conference Tutorial:  
December 11, 2023**

**Conference: December 12 -  
December 15, 2023**

**Venue: Indian Statistical  
Institute, Kolkata**

Monday, December 11		Tuesday, December 12		Wednesday, December 13		Thursday, December 14		Friday, December 15	
Time	Event	Time	Event	Time	Event	Time	Event	Time	Event
9:00 - 10:00	Registration	9:00 - 10:00	Registration	9:00 - 10:00	Registration	9:00 - 10:00	Registration	9:00 - 10:00	Registration
10:00 - 12:00	Tutorial 1	10:00 - 10:30	Inauguration	10:00 - 12:00	TS04, TS05, TS06	10:00 - 12:00	TS10, TS11, TS12	10:00 - 11:40	TS13, TS14, TS15
12:00 - 12:30	Tea/Coffee Break	10:30 - 11:00	High Tea/Coffee Break	12:00 - 12:30	Tea/Coffee Break	12:00 - 12:30	Tea/Coffee Break	11:40 - 12:10	Tea/Coffee Break
12:30 - 14:30	Tutorial 2	11:00 - 12:00	Keynote Talk 1	12:30 - 13:30	Keynote Talk 3	12:30 - 13:30	Keynote Talk 4	12:10 - 12:55	Invited Talk 4
		12:05 - 12:50	Invited Talk 1					13:00 - 13:45	Invited Talk 5
14:30 - 15:30	Lunch Break	12:50 - 14:00	Lunch Break	13:30 - 14:45	Lunch Break	13:30 - 14:45	Lunch Break	13:45 - 14:45	Lunch Break
15:30 - 17:30	Tutorial 3 Tutorial 4	14:00 - 16:00	TS01, TS02, TS03	14:45 - 15:30	Invited Talk 2	14:45 - 15:30	Invited Talk 3	14:45 - 16:45	Student Research Workshop
18:00 - 18:30	Tea/Coffee Break	16:00 - 16:30	Tea/Coffee Break	15:30 - 16:00	Tea/Coffee Break	15:30 - 16:30	Industrial Session	16:45 - 17:15	High Tea/Coffee Break
18:30 - 19:30	Cultural Program	16:30 - 17:30	Keynote Talk 2	16:00 - 18:20	TS07, TS08, TS09	16:30 - 18:30	Doctoral Colloquium	17:15 - 18:00	Valedictory
19:30 - 21:00	Welcome Dinner	17:35 - 18:35	IAPR Public Lecture	19:00 - 20:00	Cultural Program				
				20:00 - 22:00	Banquet				

<b>Keynote Talk 1: Trevor Hastie</b>
<b>Keynote Talk 2: Bernhard Schölkopf</b>
<b>Keynote Talk 3: Alison Noble</b>
<b>Keynote Talk 4: Dacheng Tao</b>
<b>IAPR Public Lecture: Dipankar Banerjee</b>

<b>Tutorial 1: Soma Biswas</b>
<b>Tutorial 2: Animesh Mukherjee</b>
<b>Tutorial 3: Anirban Santara</b>
<b>Tutorial 4: Sangheeta Roy</b>

<b>Invited Talk 1: Richa Singh</b>
<b>Invited Talk 2: SP Arun</b>
<b>Invited Talk 3: Balaraman Ravindran</b>
<b>Invited Talk 4: Balasubramanian Narasimhan</b>
<b>Invited Talk 5: Gajendra P. S. Raghava</b>

TS01: Pattern Recognition
TS04: Statistical Learning
TS07: Medical Imaging
TS10: Soft Computing
TS13: Computational Neurology

TS02: Machine Learning
TS05: Cognitive Computing
TS08: Image and Video Processing
TS11: Information Security
TS14: Biometrics

TS03: Deep Learning
TS06: Computational Intelligence
TS09: Computer Vision
TS12: Signal Processing
TS15: Bioinformatics

**NAB1:** Tutorial 3, Valedictory, TS02, TS04, TS08, TS11, TS13

**PJAB:** Registration, Inauguration, Keynote Talks, Invited Talks, Public Lecture, Industrial Session, Doctoral Colloquium, Cultural Program, Tutorial 1, Tutorial 2, Tutorial 4, TS01, TS05, TS09, TS12, TS14

**NAB2:** Student Research Workshop, TS03, TS06, TS07, TS10, TS15

Date	Lecture	Title of the Talk and Speaker	Session Chair
Monday, December 11, 2023	Tutorial 1 (PJAB)	<b>Matching Across Domains Using Limited Data</b> Soma Biswas, <i>Indian Institute of Science Bangalore, India</i>	Pabitra Mitra <i>IIT Kharagpur</i>
	Tutorial 2 (PJAB)	<b>AI and Ethics</b> Animesh Mukherjee, <i>Indian Institute of Technology Kharagpur, India</i>	Swapna Agarwal <i>TCS Research Lab</i>
	Tutorial 3 (NAB1)	<b>On Learning Useful Skills by Exploring Real Environments</b> Anirban Santara, <i>Google Research India</i>	Dinabandhu Bhandari <i>HIT Kolkata</i>
	Tutorial 4 (PJAB)	<b>Unveiling the Code of Neuronal Activation Patterns</b> Sangheeta Roy, <i>TCS Research Lab, Kolkata, India</i>	Raghunath Chatterjee <i>ISI Kolkata</i>
Tuesday, December 12, 2023	Keynote Talk 1 (PJAB)	<b>Statistical Learning with Sparsity</b> Trevor Hastie, <i>Stanford University, USA</i>	Probal Chaudhuri <i>ISI Kolkata</i>
	Invited Talk 1 (PJAB)	<b>Adventures and Impact of AI in Face Recognition and Deepfakes</b> Richa Singh, <i>Indian Institute of Technology Jodhpur, India</i>	Bhabatosh Chanda <i>IIIT Kalyani</i>
	Keynote Talk 2 (PJAB)	<b>Symbolic, Statistical and Causal AI</b> Bernhard Schölkopf, <i>Max Planck Institute for Intelligent Systems, Germany</i>	Arup Bose <i>ISI Kolkata</i>
	IAPR Public Lecture (PJAB)	<b>India's first Solar Space observatory: Aditya L1 and scope of AI</b> Dipankar Banerjee, <i>Aryabhata Research Institute of Observational Sciences, India</i>	Supratik Pal <i>ISI Kolkata</i>
Wednesday, December 13, 2023	Keynote Talk 3 (PJAB)	<b>Progress in Learning to Simplify Ultrasound</b> Alison Noble, <i>University of Oxford, UK</i>	Malay K. Kundu <i>ISI Kolkata</i>
	Invited Talk 2 (PJAB)	<b>Improving Machine Vision using Insights from Neuroscience</b> SP Arun, <i>Indian Institute of Science Bangalore, India</i>	Dipti Prasad Mukherjee <i>ISI Kolkata</i>
Thursday, December 14, 2023	Keynote Talk 4 (PJAB)	<b>More Is Different - Beyond Wittgenstein's Philosophy</b> Dacheng Tao, <i>University of Sydney, Australia</i>	Bidyut B. Chaudhuri <i>TIU Kolkata</i>
	Invited Talk 3 (PJAB)	<b>Reinforcement Learning with Structured Actions and Policies</b> Balaraman Ravindran, <i>Indian Institute of Technology Madras, India</i>	Bhargab B. Bhattacharya <i>ISI Kolkata</i>
Friday, December 15, 2023	Invited Talk 4 (PJAB)	<b>Convex Optimization: Tools and Applications in Statistics and Data Science</b> Balasubramanian Narasimhan, <i>Stanford University, USA</i>	Biswabrata Pradhan <i>ISI Kolkata</i>
	Invited Talk 5 (PJAB)	<b>Computer-Aided Healthcare in Era of Artificial Intelligence</b> Gajendra P. S. Raghava, <i>Indraprastha Institute of Information Technology, New Delhi, India</i>	Pinakpani Chakrabarti <i>Bose Institute</i>

## PReMI'23: List of Technical Sessions and Contributory Papers

Date	Technical Session	ID	Title of the Paper	Session Chair
Tuesday, December 12, 2023	TS01: Pattern Recognition (PJAB)	007	An efficient approach for findings document similarity using optimized word mover's distance	Amita Pal <i>ISI Kolkata</i>
		087	Aggregate load forecasting in residential smart grids using deep learning model	
		109	Spot the Bot: Distinguishing Human-Written and Bot-Generated Texts Using Clustering and Information Theory Techniques	
		120	Conditioning Covert Geo-Location (CGL) Detection on Semantic Class Information	
		143	Search-time Efficient Device Constraints-Aware Neural Architecture Search	
		169	Gödel Number Based Encoding Technique for Effective Clustering	
	TS02: Machine Learning (NAB1)	003	Unsupervised Discovery of Recurring Spoken Terms using Diagonal Patterns	Anil K. Ghosh <i>ISI Kolkata</i>
		024	MuOE: A Multi-Task Ordinality aware approach towards Engagement Detection	
		027	Handling Small Disjuncts and Class Skew using Sequential Ellipsoidal Partitioning	
		105	Error-bounded Bimodal Isotropic Remeshing using Curvature Map and Voronoi Tessellation	
		277	Multi-criteria decision-making based classifier ensemble by using Prioritized Aggregation Operators	
		298	Federated Optimization with Linear-time approximated Hessian diagonal	
	TS03: Deep Learning (NAB2)	123	Oscillatory Network and Deep Value Network based Memory Replay Model of Hippocampus	Smarajit Bose <i>ISI Kolkata</i>
		136	Statistically Matched DWT based Novel DNN framework for Visual SLAM	
		161	Compression of Large LSTM networks for Inference on Space Constraint Systems	
		251	Deep Adaptive Pix-2-Pix Conditional Generative Adversarial Networks for Semantic Segmentation of Medium Resolution Google Earth Imagery	
		259	Fine grained attribute-object feature representation in Compositional Zero-Shot Learning	
		286	Precise and Faster Image Description Generation with Limited Resources using an Improved Hybrid Deep Model	
Wednesday, December 13, 2023	TS04: Statistical Learning (NAB1)	151	Inverse Reinforcement Learning with Constraint Recovery	Sukhendu Das <i>IIT Madras</i>
		156	Transfer Learning Kernel-Based Domain Adaptation with Distance-Based Penalization	
		160	A Contrastive Learning Approach for Infrared-Visible Image Fusion	
		201	A Supervised Approach for Efficient Video Anomaly Detection using Transfer Learning	
		221	Deep Sparse Representation Learning for Multi-Class Image Classification	
		302	A novel Graph Representation Learning Approach for Visual Modeling using Neural Combinatorial Optimization	
	TS05: Cognitive Computing (PJAB)	026	Explainable Decision Tree-based Screening of Cognitive Impairment Leveraging Minimal Neuropsychological Tests	Partha Bhowmick <i>IIT Kharagpur</i>
		057	Semi-supervised Contrastive Regression for Estimation of Eye Gaze	
		134	iBEHAVE : Behaviour Analysis Using Eye Gaze Metrics	
		148	EngageDat-vL: A Multimodal Engagement Dataset comprising of Emotional, Cognitive, and Behavioral Cues in Virtual Learning Environment	
		174	iGame: Cognitive Game Analysis through Eye Movements of the player	
		306	Cortical Circuits of Context Adaptability: Understanding the Neurobehavioral Mechanisms Underlying Flexible Behavior	
	TS06: Computational Intelligence (NAB2)	054	Generation of Multi-Layered QR Codes with Efficient Compression	Ananda M. Mondal <i>FIU, USA</i>
		055	Analysis of Segmented Spectrograms for Human activity recognition via Neural Network	
		146	Modified Group Delay Features for Emotion Recognition	
		178	Formal concept analysis for evaluating intrinsic dimension of a natural language	
		203	User Interest Drift Identification using Contextual factors in implicit feedback-based Recommender Systems	
		208	Spot the bot: Coarse-Grained Partition of Semantic Paths for Bots and Humans	
Wednesday, December 13, 2023	TS07: Medical Imaging (NAB2)	059	Self-Supervised Diffusion Model for Anomaly Segmentation in Medical Imaging	Jaya Sil <i>IIST Shibpur</i>
		118	Ensemble Methods with [18F]FDG-PET/CT Radiomics in Breast Cancer Response Prediction	
		129	3-D Attention-SEV-Net for Segmentation of Post-operative Glioblastoma with Interactive Correction of Over-segmentation.	
		159	Local Binary Pattern Induced Optimized CNN for Brain Tumor Diagnosis from MRI data	
		163	iPyrDAE: Image Pyramid-based Denoising Autoencoder for Infrared Breast Images	
		192	Domain Adapted Few-Shot Learning for Breast Histopathological Image Classification	
	TS08: Image and Video Processing (NAB1)	307	Attention-CNN Model for COVID-19 Diagnosis Using Chest CT Images	Ananda Chowdhury <i>Jadavpur University</i>
		018	Multi-focus image fusion using reorganized DTT moments and sparse representation	
		093	Universal Detection and Source Attribution of Diffusion Model Generated Images with High Generalization and Robustness	
		121	Semi-Supervised Video Object Segmentation using Parallel Coattention Network	
		158	SoccerKDNet: A Knowledge Distillation Framework for Action Recognition in Soccer Videos	
		191	DeFlare-Net: Flare Detection and Removal Network	
200	A Novel Network Architecture for Microplankton Classification in Digital Holographic Images			
280	Generation of data for training retinal image segmentation models			

## PREMI'23: List of Technical Sessions and Contributory Papers

Date	Technical Session	ID	Title of the Paper	Session Chair
Wednesday, December 13, 2023	TS09: Computer Vision (PJAB)	041	Object Detection with YOLO Model on NAO Humanoid Robot	Amlan Chakrabarti <i>University of Calcutta</i>
		083	Scene Estimation for Making Active Decisions	
		104	Quantized Disentangled Representations for Object-Centric Visual Tasks	
		110	RGB-D fusion based on fuzzy optimization for salient object detection	
		111	AfforDrive : Detection of Drivable Area for Autonomous Vehicles	
		175	Revealing the Unseen: A Single-Stage Attention Based Occluded Object Detection Model in Remote Sensing Imagery	
		264	A Study of Quantifying the Deviation of Remotely Sensed Objects From Multi-Spectral Images	
Thursday, December 14, 2023	TS10: Soft Computing (NAB2)	011	Multi-objective Non-overlapping Front Generation: A Pivot-based Deterministic Non-dominated Sorting Approach	Vasilii A. Gromov <i>HSE, Russia</i>
		022	Elephant Swarm Water Search Algorithm (LESWSA) for Solving Constrained Optimization Problems: A List based Randomized Approach	
		082	Fuzzy rule-based approach towards cognitive load measurement during mental task using fNIRS	
		092	A Grammatical Evolution based Automated Configuration of an Ensemble Differential Evolution Algorithm	
		140	Scalable Centroid based Fuzzy Min-Max Neural Network Ensemble classifier using MapReduce	
	TS11: Information Security (NAB1)	231	Membership Adjusted Superpixel based Fuzzy C-Means for White Blood Cell Segmentation	Nabendu Chaki <i>University of Calcutta</i>
		012	MSPIS: Multimodal Suspicious Profile Identification System in Online Social Network	
		016	Ignore-and-recalculate strategy for a lossless and low-cost secret image sharing scheme	
		035	Cyberbully: Aggressive Tweets, Bully and Bully Target Profiling from Multilingual Indian Tweets	
	TS12: Signal Processing (PJAB)	091	Financial Misinformation Detection via RoBERTa and Multi-Channel Networks	Swagatam Das <i>ISI Kolkata</i>
		095	Quantum Image Teleportation based on Probabilistic Bit-Encoding strategy	
		173	Annihilation of Image Stegogram through Deep Texture Extraction based Sterilization	
		020	Heterogeneous Stacked Ensemble Framework for Surface Electromyography Signal Classification	
		025	Audio Fingerprinting System to Detect and Match Audio Recordings	
		097	Analysis of Speaker Recognition in Blended Emotional Environment using Deep Learning Approaches	
126		Spatiotemporal Co-occurrence Index using Spatiotemporal Variability Signals		
Friday, December 15, 2023	TS13: Computational Neurology (NAB1)	128	Noise Robust Whisper Features for Dysarthric Severity-Level Classification	Amitava Chatterjee <i>Jadavpur University</i>
		147	Multilingual Speech Identification Framework (MSIF): A Novel Approach in language identification	
		152	Spoken Language Identification using Linear Frequency Residual Cepstral Coefficients	
		005	Multi-modal Multi-class Parkinson Disease Classification Using CNN and Decision Level Fusion	
	TS14: Biometrics (PJAB)	108	Mental Workload Classification with One-Dimensional CNN using fNIRS Signal	Hemant A. Patil <i>DA-IICT, Gujrat</i>
		162	An Effective Centrality-based Community Detection Approach using scRNA-Seq data for critical neuro-degenerative diseases	
		207	Chronologically arranged Convolutional Gated Recurrent Network for EEG-Based Schizophrenia Detection	
		299	A Novel Brain Connectivity-Powered Graph Signal Processing Approach for Automated Detection of Schizophrenia from Electroencephalogram Signals	
		008	FVINet: Translating Thermograms to Facial Vasculature Imprints	
	TS15: Bioinformatics (NAB2)	135	Enforcement of DNN with LDA-PCA-ELM for PIE invariant Few-shot Face Recognition	Sudipto Saha <i>Bose Institute</i>
180		Identifying a Person in Mask: Fusion of Masked Face and Iris		
217		A PCA based Keypoint Tracking Approach to Automated Facial Expressions Encoding		
266		A Clustering-Based Approach for the Extraction of ROI from Fingerprint Images		
182		Encoded Deep Vectors for Eukaryotic Exon Prediction		
210	Quantifying Intratumor Heterogeneity by Key Genes Selected Using Concrete Autoencoder			
249	Identification of potential prognostic biomarkers for ESCC using Single-cell RNA Sequencing Data Analysis			
276	Litchi Fruit Instance Segmentation from UAV Sensed Images using Spatial Attention-based Deep Learning Model			
283	ccLoopER : Deep prediction of CTCF and Cohesin mediated chromatin looping using DNA transformer model			

### Time Allotted for Each Talk

**Keynote talk:** 60 minutes, including 10 minutes for Q&A

**Invited talk:** 45 minutes, including 5 minutes for Q&A

**Public lecture:** 60 minutes, including 10 minutes for Q&A

**Contributory talk:** 20 minutes, including 3 minutes for