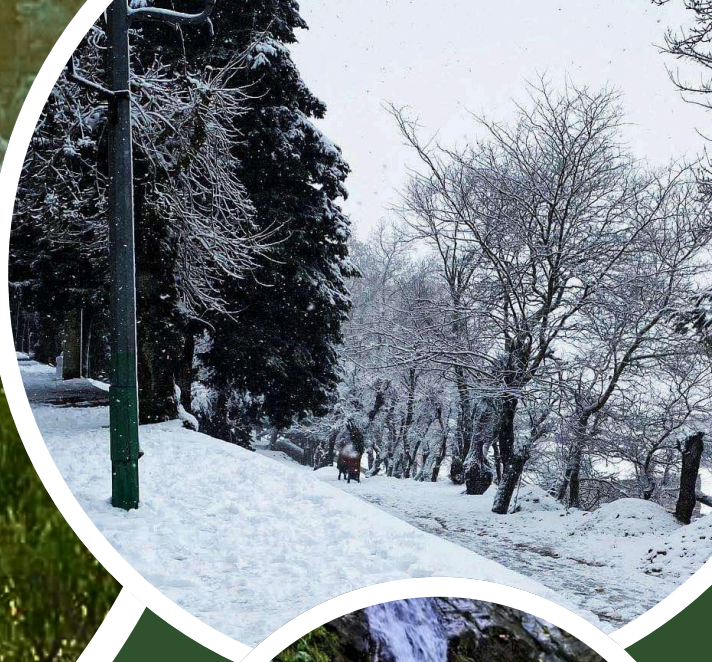

8TH EDITION

PHARES 2025

From 17 to 19 January 2025 at the
Hôtel Royal Rihana, Ain Draham, Tunisia.

THEMES

GEOMETRIC MACHINE LEARNING
DEEP LEARNING
HYPERSPECTRAL DATA
CLASSIFICATION
DIMENSION REDUCTION
RIEMANNIAN COMPUTATION
TRANSFORMERS
NON-LINEAR MACHINE LEARNING
NATURAL LANGUAGE PROCESSING
COMPUTER VISION

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Program

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	Friday 17 / 01	Saturday 18 / 01	Sunday 19 / 01
08H30 - 09H30	**Oral Session 1 :** **Advances in Deep Learning** **Session Chair "Majdi Jribi"** 3 presentations of 20 minutes (15 min presentations + 5 min questions)	**Oral Session 3 :** **Advanced Image Processing Techniques** **Session Chair "Mohamed Farah"** 3 presentations of 20 minutes (15 min presentations + 5 min questions)	**Cultural Visit**
09H30 - 10H30	**Oral Session 2 :** **Innovative Machine Learning Methods** **Session Chair "Mohamed Amine Mezghich"** 3 presentations of 20 minutes (15 min presentations + 5 min questions)	**Oral Session 4 :** **AI for Forecasting and Security** **Session Chair "Emna Ghorbel"** 3 presentations of 20 minutes (15 min presentations + 5 min questions)	**Cultural Visit**
10H30 - 11H30	**Coffee Break**	**Coffee Break**	
11H30 - 12H30	**Tutorial 1** **Deep approaches, Riemannian theory, and invariant theory: comparison and convergence** **Prof. Faouzi Ghorbel** Laboratory CRISTAL ENSI	**Tutorial 2** **Artificial Intelligence for Geospatial Applications: challenges and issues** **Prof. Riadh Ferah** Laboratory RIADI ENSI	
12H30 - 14H00	**Lunch**	**Lunch**	
14H00 - 15H30	**Poster Session 1 :** **Deep Neural Network Innovations** **Session Chair "Dorra Dhouib"**	**ArtsPi Meeting**	
15H30 - 16H00	**Guest speaker** **Prof. Mohamed Ferah** (25 min presentation + 5 min questions)	**ArtsPi Meeting**	
16H00 - 17H30	**Poster Session 2 :** **Applied Deep Learning Methods** **Session Chair "Ali Ben Abbess"**	**ArtsPi Meeting**	
	Dinner	**Dinner**	

Oral & Poster Presentations

8TH EDITION PHARES 2025

N°	Session	Author	Title
1	**Oral Session 1 : Advances in Deep Learning**	Amal Araoud (CRISTAL/GRIFT laboratory, ENSI)	Dimensionality Reduction on the SPD Manifold: A Comparative Study of Linear and Non-linear Methods
2	**Oral Session 1 : Advances in Deep Learning**	Imen Smati (CRISTAL/GRIFT laboratory, ENSI)	Enhancing Deep Classifier Robustness through Contour Re-Parametrization
3	**Oral Session 1 : Advances in Deep Learning**	Manel Rhif (CRISTAL/GRIFT laboratory, ENSI)	A Hybrid Framework for Time Series Forecasting: Combining Wavelet Transforms and Deep Learning
4	**Oral Session 2 : Innovative Machine Learning Methods**	Achraf Ghorbel (CRISTAL/GRIFT laboratory, ENSI)	Comparison of Dimensionality Reduction Methods for Improving Explainability and Stability of Machine Learning Models
5	**Oral Session 2 : Innovative Machine Learning Methods**	Hand Zeinabidin (CRISTAL/GRIFT laboratory, ENSI)	New helical representation of elongated surface shapes based on an almost complete descriptor
6	**Oral Session 2 : Innovative Machine Learning Methods**	Moez Bouchoucha (TALAN)	Tunispeak : Open-source dataset for the bidirectional English -Tunisian translation
7	**POSTER SESSION 1 : DEEP NEURAL NETWORK INNOVATIONS**	Samah Kareem (ISIK University)	Religious Image Classification: A Comparative Analysis of Deep Learning Models
8	**POSTER SESSION 1 : DEEP NEURAL NETWORK INNOVATIONS**	Zaineb Bibani (CRISTAL/GRIFT laboratory, ENSI)	Data Augmentation Based on Quadratic Transformations
9	**POSTER SESSION 1: DEEP NEURAL NETWORK INNOVATIONS**	Arwà Habbechi (CRISTAL/GRIFT laboratory, ENSI)	Ordered alignment of 3D faces for recognition
10	**POSTER SESSION 1 : DEEP NEURAL NETWORK INNOVATIONS**	Dorsaf Hmida (CRISTAL/GRIFT laboratory, ENSI)	Quaternion Squeeze and Excitation Networks: Mean, Variance, Skewness, Kurtosis As One Entity
11	**POSTER SESSION 1 : DEEP NEURAL NETWORK INNOVATIONS**	Chayma Chawechi (CRISTAL/GRIFT laboratory, ENSI)	Evaluating the reproducibility of Deep Neural Networks
12	**POSTER SESSION 1 : DEEP NEURAL NETWORK INNOVATIONS**	Abir Bousmina (RIADI laboratory, ENSI)	Explicabilité des Graph Neural Networks Temporels pour la Gestion des Risques de Catastroph
13	**POSTER SESSION 1 : DEEP NEURAL NETWORK INNOVATIONS**	Wafa Bakir (RIADI laboratory, ENSI)	Mapping Roman Roads through Remote Sensing: A study of the Carthage-Theveste Road

Oral & Poster Presentations

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N°	Session	Author	Title
14	**POSTER SESSION 2 : APPLIED DEEP LEARNING METHODS**	Fares Braiek (CRISTAL/GRIFT laboratory, ENSI)	Action recognition from 3D human skeleton data
15	**POSTER SESSION 2 : APPLIED DEEP LEARNING METHODS**	Ayoub Bnina (ISAAM)	Deep Learning for Vision-Based Navigation of Autonomous Underwater Robots
16	**POSTER SESSION 2 : APPLIED DEEP LEARNING METHODS**	Wiem Baazouzi (RIADI laboratory, ENSI)	Enhancing Multi-Answer KG Question Answering: Addressing Sparsity with Innovative Integration Methods
17	**POSTER SESSION 2 : APPLIED DEEP LEARNING METHODS**	Mariem Ayed (CRISTAL/GRIFT laboratory, ENSI)	3D Deep Neural Networks for Brain Tumor Classification in Medical Imaging
18	**POSTER SESSION 2 : APPLIED DEEP LEARNING METHODS**	Jarray Noureddine (CRISTAL/GRIFT laboratory, ENSI)	Multilayer Soil Moisture Estimation at fine spatial resolution: A case study of arid and semi-arid regions in Tunisia
19	**POSTER SESSION 2 : APPLIED DEEP LEARNING METHODS**	Manel Zouaoui (CRISTAL/GRIFT laboratory, ENSI)	Comparison of Federated Learning and Centralized Machine Learning for Image Compression using the QRes-VAE Model
20	**POSTER SESSION 2 : APPLIED DEEP LEARNING METHODS**	Mohamed Louay Rabah (CRISTAL/GRIFT laboratory, ENSI)	Enhancing Explainability in Medical Diagnostics
21	**ORAL SESSION 3 : ADVANCED IMAGE PROCESSING TECHNIQUES**	Mariam Jendoubi (CRISTAL/GRIFT laboratory, ENSI)	Robust Skin Lesion Segmentation Approach Combinig YOLOv8 and Level-Set Techniques
22	**ORAL SESSION 3 : ADVANCED IMAGE PROCESSING TECHNIQUES**	Farah Chouikhi (RIADI laboratory, ENSI)	Siamese Variational Autoencoder and Transfer Learning for Desertification Detection in Arid Regions of Tunisia Using Bi-Temporal Landsat Images
23	**ORAL SESSION 3 : ADVANCED IMAGE PROCESSING TECHNIQUES**	Douha Jerbi (CRISTAL/GRIFT laboratory, ENSI)	Morphing of 3D Face Surfaces : An SA(3)-Invariant Approach
24	**ORAL SESSION 4 : AI FOR FORECASTING AND SECURITY**	Aya Ferchichi (RIADI laboratory, ENSI)	Towards Counterfactual-Based Explainable Deep Learning for Causal Inference in Spatio-Temporal Signal and Image Forecasting
25	**ORAL SESSION 4 : AI FOR FORECASTING AND SECURITY**	Mahmoud Ghorbel (Polytechnic University of Hauts-de-France, France)	Hijacking Machine Learning models without Training Access
26	**ORAL SESSION 4 : AI FOR FORECASTING AND SECURITY**	Hanen Balti (RIADI laboratory, ENSI)	SmartSDGTunisia Project: Leveraging AI and Satellite Imagery to Drive Sustainable Development in Tunisia

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