**Workshop on AI-driven Data Engineering and Reusability for Earth and Space Sciences (DARES’25)**

Co-located with ECAI 2025

*Saturday 25 October 2025*

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| 9:00-9:10 | **Welcome and Introduction to the Workshop**. Iraklis Klampanos (University of Glasgow, UK), Manolis Koubarakis (National and Kapodistrian University of Athens, Greece) and Antonis Troumpoukis (NCSR “Demokritos”, Greece) |
| 9:10-9:50 | **Keynote 1: From Self-Supervision to Trustworthy EO Foundation Models**.  Ioannis Papoutsis (National Technical University of Athens, Greece) |
| 9:50-10:10 | **Comovement in Geo-referenced Time Series: A Copula-Based Approach for Clustering**. Alessia Benevento, Fabrizio Durante and Roberta Pappadà |
| 10:10-10:30 | **Knowledge Graph-Enhanced Retrieval-Augmented Generation for Earth Observation Data**. Roxanne El Baff, Ben Schluckebier and Tobias Hecking |
| *10:30-11:00* | *Coffee break* |
| 11:00-11:20 | **Assessing Synthetic Data Quality and Model Generalization for Planetary Imagery**. Clara Salditt, Karan Molaverdikhani and Barbara Ercolano |
| 11:20-11:40 | **Weather Prediction on Mars as a Multivariate Time Series Forecasting Problem**. Sagar Uprety, Amel Bennaceur, Carlos Gavidia-Calderon, James Holmes, Manish Patel and Kylash Rajendran |
| 11:40-12:00 | **Explainable Spatial Modeling of Groundwater Nitrate Concentrations in the Netherlands**. Iulia Capralova and Juan Cardenas-Cartagena |
| 12:00-12:20 | **DA4DTE: An Agentic System for Enhancing the Accessibility of Digital Twins of Earth**. Myrto Tsokanaridou, Jakob Heinrich Hackstein, Genc Hoxha, Sergios-Anestis Kefalidis, Konstantinos Plas, Begum Demir, Manolis Koubarakis, Marco Corsi, Cristian Leoni, Giorgio Pasquali, Chiara Pratola, Simone Tilia and Nicolas Longepe |
| *12:20-14:00* | *Lunch break* |
| 14:00-14:50 | **Keynote 2: Semi-Supervised and Multi-label Classification of Remotely Sensed Images**. Sašo Džeroski (Jožef Stefan Institute, Slovenia) |
| 14:50-15:10 | **Vessel Trajectory Prediction Using Robust AIS Preprocessing and Dual-Self-Attention GRU**. Marilena Sinni and Dimitris M. Kyriazanos |
| 15:10-15:30 | **LLM-Driven Knowledge Graph Construction from Earth Observation Data for Extreme Events**. Theodoros Aivalis, Iraklis A. Klampanos and Antonis Troumpoukis |
| *15:30-16:00* | *Coffee break* |
| 16:00-16:20 | **Elevation Data Integration Approaches for Deep Learning-Based 2-m Temperature Downscaling**. Antigoni Moira, Stelios Karozis, Theodoros Giannakopoulos, Effrosyni Karakitsou, Nikolaos Gounaris and Athanasios Sfetsos |
| 16:20-16:40 | **An Explainable Multi-Source Unsupervised Domain Adaptation Framework Using Contrastive Learning and Adaptive Clustering for Remote Sensing Scene Classification**. Binu Jose, Pranesh Das, Ebrahim Ghaderpour and Paolo Mazzanti |
| 16:40-17:00 | **A Deep Learning Approach to Evaluate Individual Predictors for Extreme Precipitation in Greece**. Vasileios Vatellis, Stelios Karozis, Iraklis Klampanos, Antonis Troumpoukis and Antonis Gkanios |
| 17:00-17:15 | **Main Takeaways and Final Thoughts from the Workshop** |