

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

Co-located with ECAI 2025

Saturday 25 October 2025

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