

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

Co-located with the 28th European Conference on Artificial Intelligence (ECAI 2025), Bologna, Italy, October 25, 2025

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Preface

Earth and Space Sciences are characterised by an exponential increase in data volume and complexity, driven by diverse sources such as satellite imagery, in-situ measurements, and simulations. Alongside AI, Europe invests heavily on Earth Observation and Space Programmes. Through Copernicus, a flagship initiative of the European Union, as well as via considerable and sustained contributions towards EUMETSAT, ESA, ECMWF and elsewhere, Europe has become a hub for high quality data and services. These programs, supported by substantial financial and technological resources, provide a crucial foundation for advancing scientific understanding, addressing global challenges and fuelling innovation. This abundance of data presents both unprecedented opportunities for scientific discovery and significant challenges in data management, analysis, and interpretation.

The workshop on AI-driven Data Engineering and Reusability for Earth and Space Sciences (DARES'25) succeeded in bringing together researchers exploring how AI methods – including machine learning, symbolic approaches, and their intersection – can be effectively applied to transform, explain, fuse, or otherwise prepare large and complex datasets from diverse sources within Earth & Space Sciences for use, verification and reuse in downstream applications. In addition, the workshop welcomed contributions to AI-powered semantic data annotation and metadata enrichment, due to their significance in improving data discoverability, interpretability, and reusability.

In response to the Call for Papers, the workshop received 14 submissions. Each submission was reviewed by at least two members of the Program Committee. Based on the reviews and the overall quality of the submissions, 11 papers were accepted for presentation and inclusion in these proceedings. The workshop was held on October 25, 2025 in Bologna, Italy, as part of the 28th European Conference on Artificial Intelligence (ECAI 2025). It was organised as a full-day physical event and the program featured two keynote presentations, in-person paper sessions, and an interactive discussion on open challenges and future research directions.

We thank all authors for their submissions and the Program Committee members for their thorough and constructive reviews. We are especially grateful to our keynote speakers, Dr Ioannis Papoutsis of the National Technical University of Athens, Greece, and Prof Sašo Džeroski of the Jožef Stefan International Postgraduate School and Jožef Stefan Institute in Ljubljana, Slovenia, for their inspiring and thought-provoking talks. Special thanks go to the ECAI 2025 Organising Committee for their support in hosting the workshop.

October 25, 2025
Bologna, Italy

The DARES'25 Workshop
Organising Committee

Workshop on AI-driven Data Engineering and Reusability for Earth and Space Sciences (DARES'25), co-located with the 28th European Conference on Artificial Intelligence (ECAI 2025), Bologna, Italy, October 25, 2025

ISBN 0000-0003-0478-4300 (I. A. Klampanos); 0000-0003-1078-8121 (A. Troumpoukis)



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Website

More information on the programme, presentations, and other material can be found on the website of the workshop: <https://dares25.github.io/>