EO4EU
Earth Observation Data & Service Accessibility

EO4EU - AI-augmented ecosystem for Earth Observation data accessibility with Extended reality User Interfaces for Service and data exploitation

About EO4EU

The project, "AI-augmented ecosystem for Earth Observation (EO) data accessibility with Extended reality User Interfaces for Service and data exploitation", or EO4EU is a European Commission funded innovation project bringing forward the EO4EU Platform which will make access and use of EO data easier for environmental, government, and even business forecasts and operations.

The EO4EU Platform, which will be available at www.eo4eu.eu, will connect already existing major EO data sources such as DestinE, GEOSS, INSPIRE, Copernicus, Galileo, among others and offer several tools and services to help users find and access the data they are interested in, as well as to analyse and visualise this data. The platform will leverage machine learning to support handling of the characteristically-large volume of EO data as well as a combination of Cloud computing infrastructure and pre-exascale high-performance computing to manage processing workloads. Specific attention is also given to developing user-friendly interfaces for EO4EU allowing users to intuitively use EO data freely and easily, even with the use of extended reality.

Objectives

- **Holistic DataOps ecosystem** to enhance access and usability of EO information.
- A **semantic-enhanced knowledge graph** that augments the FAIRness of EO data and supports sophisticated data representation and dynamics.
- A **machine learning pipeline** that enables the **dynamic annotation** of the various EO data sources.
- Efficient, reliable and interoperable **inter- and intra- data layer communications**
- Advance stakeholders' knowledge capacity through informed **decision making and policy making support**.
- A full range of **use case scenarios** addressing current data needs, capitalizing existing digital services and platforms, fostering their usability and practicality, taking into account ethical aspects aiming to social impact maximization.

Hear and learn about EO4EU directly from the people behind it.
Watch our mini-documentary: https://www.eo4eu.eu/watch

Opportunities for the EOSC community

The EO4EU Platform will make EO data more accessible to all non-expert users and ensuring that EO data is further exploited not only within the research communities producing them but also other domains, or even application areas such as policy-making or the private sector.

Architecture

Technical and scientific innovation

- Improve compression rates for image quality, and reduce data volumes
- Improve the quality of reconstructed compressed images
- Facilitate design of custom services with a minimized labelled data requirement
- Learn robust and transferable representations of EO data
- Publishing original trained models on EO data with all relevant assisting material to support reusability in a public repository
- Graph-of-docs approach meaningfully represents the textual data of a knowledge graph
- Data fusion optimized execution in HPC and GPU environment
- Customizable visualization tools tailored to the needs of each use case
- Dedicated graphs for end-users with various granularities, modalities, metrics and statistics to observe the overall trends in time, correlations, cause and effect relationships through a responsive web-interfaced module

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