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openEO Platform: Large-scale Earth Observation Analysis on a federated compute infrastructure

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Earth Observaton satellites create a growing data archive enabling environmental
monitoring services which advance the knowledge about planet earth significantly. openEO Platform builds upon this data archive and allows users to access and process Earth Observation data for their needs on a federated infrastructure. This approach exhibits several advantages:Firstly, the user does not need to download, store, and handle large amounts of Earth Observation data.Secondly, the federated compute platform enables the user to process data fast and facilitates computations at large scale.Lastly,users can easily share their analysis with other uses which simplifies the reproducibility of scientific projects.
openEO Platform builds on the successful development of the openEO Application
Programming Interface (API) which was developed in the Horizon 2020 project openEO
(2017–2020, see https://openeo.org/)
The openEO project defined a common set of analytic operators for Earth Observation analysis which was implemented by several backends.This common architecture was expanded by an aggregation layer to openEO Platform, an operational, federated service running at EODC, VITO and Sinergise.openEO Platform is currently built with a strong focus on user co-creation and input from several use-cases from a variety of disciplines. The use-cases include CARD4L compliant ARD data creation with user defined parameterisation,forest dynamics mapping including time series fitting and prediction functionalities, crop type mapping including EO feature engineering supporting machine learning based crop mapping and forest canopy mapping supporting regression-based fraction cover mapping.Three programming interfaces (R, Python and JavaScript) are available to interact with openEO Platform and perform an Earth Observation analysis. EGI Checkin is implemented as the authentication mechanism to enable easy access to users.In this demonstration session we will showcase the use of the platform via Python Jupyter Notebooks and a graphical user interface. The session will cover:Sign up,Sign in,submitting first small jobs and short introduction to larger scale processing.

Any relevant links

Topic

Data Spaces

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