

Come to Play: Federated, Interoperable AI-Cubes at Your Fingertips

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Datacubes form an acknowledged cornerstone for analysis-ready data – the multi-dimensional paradigm is natural for humans and easier to handle than zillions of scenes, for both humans and programs. Today, datacubes are common in many places – powerful management and analytics tools exist, with both datacube servers and clients ranging from simple mapping over virtual globes and Web GIS to high-end analytics through python and R. This ecosystem is backed by established standards in OGC, ISO, and further bodies.

In the EarthServer federation, institutions from the US, Europe, and Asia contribute spatio-temporal datacubes through OGC compliant services, including the CoperniCUBE datacube ecosystem. Weather and climate data, satellite data timeseries, and further data are provided, altogether multi-Petabyte. A unique feature is the location transparency: users see the federation offerings as a single, integrated pool. The federation member nodes orchestrate incoming queries automatically, including distributed data fusion.

Further, a tight integration of AI and datacubes is provided through the novel concept of AI-Cubes.

We briefly introduce the concepts of datacubes and then explore hands-on together how to access, extract, analyze, and reformat data from datacubes. Particular emphasis is on federation aspects.

Most of the examples can be recapitulated and modified by participants with online access. Ample room will be left for discussion.

The contributor is editor of the datacube standards in OGC and ISO and member, EOSSC.

Topic

Data innovations: Data Spaces

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