A Scalable Datacube-Enabled AI Infrastructure Based on Open Standards

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Abstract:

Artificial Intelligence (AI), specifically Machine Learning (ML), enjoys much attention due to the flexibility, power, and further advantageous properties. Consequently, much Research and Development (R&D) is being invested, with manifold results obtained and expected.

However, integrating pretrained models into common Earth data workflows is still not straightforward and typically based on ad-hoc approaches. This holds even more so for reproducible training of exchangeable models. It is desirable, therefore, to agree on standards-based frameworks with a seamless workflow integration and a free flow of models.

We present our research on a seamless integration of arbitrary pretrained models with spatio-temporal datacubes, allowing the models to immediately tap into all datacubes available. Model application is done via OGC standard APIs allowing to add arbitrary ad-hoc pre- and postprocessing of model inputs and outputs.
