

ExtremeEarth: Scalable big data and deep learning techniques for Copernicus data

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In this presentation I give an overview of the progress in H2020 project ExtremeEarth (<http://earthanalytics.eu/>) which investigates scalable big data and deep learning techniques for Copernicus data. The project is driven by two use cases in the areas of Food Security and Polar Regions.

The former use case aims to develop irrigation recommendations from farmers while the latter will produce ice maps that can aid maritime users in the Arctic. The contributions of the project in the area of deep learning are twofold: (i) the production of two very large training datasets (millions of samples) for crop type mapping and ice classification, and (ii) the study of LSTM and CNN architectures for the same problems. In the area of big data, the project is developing four big linked geospatial data systems and a benchmarking environment for evaluating their performance and scalability. The development of all algorithms, systems and use cases takes place in the big data and AI platform Hopsworks (<https://www.logicalclocks.com/>) and run on CREODIAS.