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RSHUB: A WEB-BASED PLATFORM FOR COLLABORATIVE RESEARCH AND INOVATION WITH REMOTE SENSING DATA AND APPLICATION

Abstract

Processing and analysis tools for satellite remote sensing data are developed to address a specific research or management problem, but most of the tools do not get reused or shared by different researchers or organizations. In addition, data analysis usually requires intensive input data needs and demand for computational resources that are usually not available within an individual research environment. Remote Sensing Hub is a collaboration-oriented project based on HUBzero platform, with goals of assistance for research of remote sense data analysis, modelling, and visualization. It enables researchers and educators to increase the impact of their efforts by publishing and sharing tools with the broader community. The cyber-infrastructure provides access to computing resources for simulation, processing and visualization utilities that the researchers can use without relying on any local resources. While HUBzero does a good job of bringing scientific users and tools together, we address extensions of this technology in order to meet the requirements of Earth Observation applications. We developed tools to enable the workflow of sophisticated geospatial analysis algorithms, with features such as algorithm toolbox, modelling, result visualization and validation. The Hub is also configured to input and output data readily shared across network by interaction with data service, and to provide access to external computational resources for batch simulations. It will build geospatial data hosting, processing and sharing capabilities into Hub-based web platform leverage resources from the data centre of national land observation satellite. The real application example is a robust classifier method that can be applied in a multisensory environment using an Active Learning strategy to select samples for labelling. Despite the initial aim, this Hub may allow broader areas regarding geospatial data analysis to make use of it.