

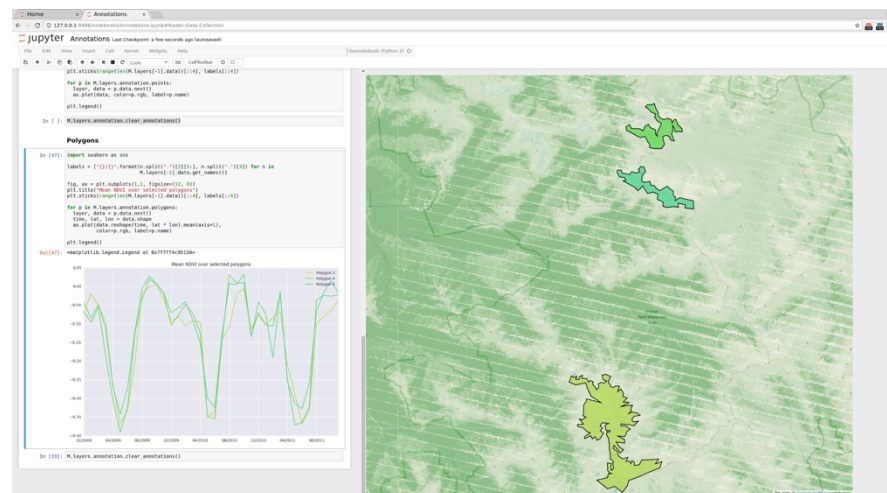


Adaptive Big Data Pipelines on NASA Earth Exchange (NEX)

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Objective

- Develop the capability to assist science teams with integration of their petabyte-scale processing pipelines with the workflow system.
- Enable users to launch seamless data production on either cloud or high performance computing environments, while tracking the data and process provenance.
- Integrate the system with web-based visualization tools to enable efficient big-data visualization and analytics of the results.
- Demonstrate new capability with Web Enabled LandSat Data (WELD).



Polygon annotations and time series analysis within Jupyter Geonotebook

Accomplishments

- Demonstrated that individual analytics and visualization functions within a system can be easily selected and manipulated by a user, with the ability to integrate selected items to meet user computing needs.
 - Investigated state-of-the-art big data analytics engines and frameworks, evaluating current capability and user needs.
 - Integrated system with Jupyter Geonotebook for demonstration.
- Demonstrated initial big-data analytics and visualization pipeline set-up on Amazon Web Services (AWS), using existing WELD production code.

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TRL_{in} = 4

TRL_{out} = 6