Nemani
NCTS# 25415-17 AGU 2016

IN13B-1660: Analytics and Visualization Pipelines for Big Data on the NASA Earth Exchange (NEX) and OpenNEX

Monday, 12 December 2016

13:40 - 18:00

- Moscone South
- - Poster Hall

We are developing capabilities for an integrated petabyte-scale Earth science collaborative analysis and visualization environment. The ultimate goal is to deploy this environment within the NASA Earth Exchange (NEX) and OpenNEX in order to enhance existing science data production pipelines in both high-performance computing (HPC) and cloud environments. Bridging of HPC and cloud is a fairly new concept under active research and this system significantly enhances the ability of the scientific community to accelerate analysis and visualization of Earth science data from NASA missions, model outputs and other sources. We have developed a web-based system that seamlessly interfaces with both high-performance computing (HPC) and cloud environments, providing tools that enable science teams to develop and deploy large-scale analysis, visualization and QA pipelines of both the production process and the data products, and enable sharing results with the community. Our project is developed in several stages each addressing separate challenge – workflow integration, parallel execution in either cloud or HPC environments and big-data analytics or visualization. This work benefits a number of existing and upcoming projects supported by NEX, such as the Web Enabled Landsat Data (WELD), where we are developing a new QA pipeline for the 25PB system.

Authors

- Aashish Chaudhary
  - Kitware Inc.
- Petr Votava
  - California State University Monterey Bay
- Ramakrishna R Nemani
  - NASA Ames Research Center
- Andrew Michaelis
  - California State University Monterey Bay
- Chris Kotfila
  - Kitware Inc.