



MISSOURIVIEW 2021 - 2022

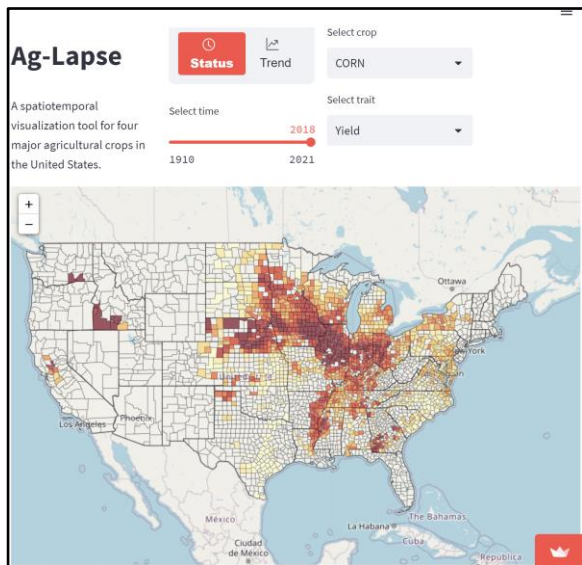
AmericaViewSM
Empowering Earth Observation Education
americaview.org

MISSOURIVIEW 2021 - 2022 ACTIVITIES

The increasing availability of geospatial data converged with recent advancements in artificial intelligence, machine learning, and cloud infrastructure offers the potential for breakthroughs in science, policy, and national security. To broaden the use of Earth Observation data and demystify machine learning and AI for remote sensing application, the development of easy-to-use libraries and teaching materials are necessary.

During 2021 – 2022 reporting period, we have published two peer reviewed papers, organized two workshops (GEOINT and GIS Day @SLU), and developed two python-based geospatial raster processing libraries (Raster4ML, and Ag-Lapse). These efforts are made to promote the use of geospatial data and contribute to the mission of AmericaView by advancing K-12 and college education.

Additionally, MissouriView consortium students and faculty presented 40 posters at Geo-Resolution national conference co-hosted by Saint Louis University and National Geospatial-Intelligence Agency.

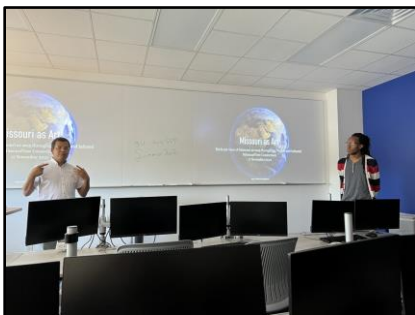


Ag-Lapse -Corn yield across the USA



Raster4ML Raster Processing Library

- Raster4ML
 - Raster4ML is a geospatial raster processing library for machine learning. When machine learning models are to be used, it is often necessary to convert the complex raster data and vector data into a tabular form, which can be understood by the machine learning algorithms. Raster4ML is a python package that has easy-to-use functionalities to perform that task. It can also calculate more than 350 vegetation indices from satellite or UAV images automatically. [LINK](#)



Presentation at GEOINT summer immersion at Saint Louis University

- Ag-Lapse
 - Ag-Lapse shows an interactive webmap that highlights different spatiotemporal pattern of crop yields across the United States. The map supports county-level information from as early as 1900 to as close as 2021. Four major crops of the United States are covered. The map shows yield, harvest area and planting area for all the crops. [LINK](#)

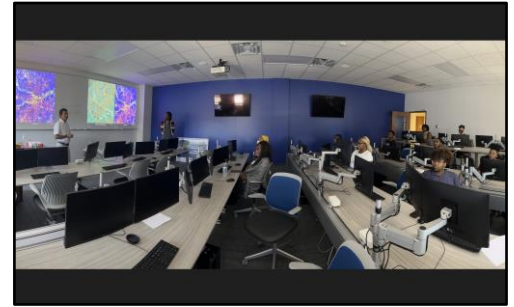
MissouriView is a member of the AmericaView Consortium, a nationally coordinated network of academic, agency, non-profit, and industry partners and cooperators that share the vision of promoting and supporting the use of remote sensing data and technology within each state. AmericaView is funded by USGS grant agreement G18AP00077.

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BENEFITS TO MISSOURI

- 11 HSSU students were trained through the GEOINT Summer Immersion workshop organized by Harris-Stowe State University and Saint Louis University in collaboration with USGIF. The goal of the workshop was to bring underrepresented students to campus and talk about mentoring opportunities, and opportunities for graduate school, and to provide two sessions that introduced students to themes in geospatial research. The first theme was devoted to remote sensing and the second theme was devoted to spatial statistics. Students were able to get hands-on experience. They were able to see the power of remote sensing and spatial statistics research.
- Raster4ML will help scientists and students from the geospatial science, GIS or remote sensing background to automate their research pipelines. Crop breeders and precision agriculturists from Missouri can find it very helpful to accelerate their tasks.
- The 2022 Geo-resolution conference provide a venue for collaboration among geospatial experts and students in government, academia, and industry. People came from coast to coast, in-person and online to contribute to this year's theme of "Geospatial Perspectives on Climate Change: Predicting and Mitigating Effects". Over 150 students participated in-person in the conference, the poster session, the mentoring lunch and the career fair. [LINK](#)



Students from the Harris Stowe State University (HSSU) participated the Summer Immersion in GEOINT hosted by the Saint Louis University.



Geo-resolution 2022, Geospatial Perspectives on Climate Change: Predicting and Mitigating Effects

MISSOURIVIEW CONSORTIUM MEMBERSHIP



HARRIS-STOWE
STATE UNIVERSITY



SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE



Washington
University in St. Louis



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