ForestSAT 2026

Association for Forest Spatial Analysis Technologies

May 4-8, 2026 | Gainesville, Florida, USA

Title: Development of a Google Earth Engine Web-Based App for Forest Monitoring

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Description: Google Earth Engine (GEE) is a cloud-based platform that hosts petabytes of satellite imagery and geospatial information from the Earth's surface. Such data, often available in near real-time and covering vast areas, can be accessed, pre-processed, and analyzed directly in the cloud, eliminating the need for local storage and heavy processing. Traditionally, using GEE requires strong JavaScript coding skills and the ability to handle large, complex scripts. However, GEE-based web applications have been increasingly published in recent years, making it easier to conduct advanced analyses and improve product reproducibility using already calibrated and validated web apps. This virtual workshop introduces participants to GEE for forest monitoring and vegetation change analysis over time, focusing on developing interactive GEE web applications for forest monitoring. For example, the Canopy Height Mapper is a GEE app integrating NASA and multi-source datasets to generate global, wall-to-wall canopy height maps.

Learning Objectives: Participants will gain hands-on experience with:

- Introduction to GEE and geospatial forest datasets (Copernicus and NASA missions' products)
- Basic JavaScript concepts for GEE coding, in GEE and access to Copernicus and NASA missions' products,
- Practical exercises, including:
  - Processing and visualization of vegetation indices
  - Creating a GEE web application
  - Analyzing and interpreting forest cover changes across different periods.

This course is supported by step-by-step tutorials and an example web application to guide participants in learning in-depth analysis.

Target audience: Students, researchers, and professionals in forestry, ecology, remote sensing, or environmental sciences interested in cloud-based tools for forest monitoring and web-based geospatial application development. No advanced coding experience is required.

Format & Activities: This virtual, hands-on workshop includes short instructional segments, live demonstrations, and guided practical exercises. Participants will work step-by-step through:

- Introduction to GEE and datasets
- JavaScript coding basics for GEE
- Processing vegetation indices
- Building and customizing a GEE web application
- Analyzing forest change across time periods

All exercises are supported by tutorials and example applications.

Expected outcomes: Participants will:

- Be able to access and analyze satellite imagery using GEE
- Build and publish their own simple GEE web applications
- Visualize and interpret vegetation changes across different time frames
- Gain confidence using cloud-based tools for geospatial data analysis

Language: English

Requirements: Google Earth Engine account.

Schedule: March 12, 2026, 9:00 AM – 2:00 PM (EST)

Duration: 4 hours.

Agenda

Eastern Time (ET)	**Topic**	**Instructor**
09:00 – 09:30	Introduction to GEE and geospatial forest datasets (NASA and Copernicus missions' products)	Cesar Alvites
09:30 – 10:30	Basic JavaScript concepts for GEE coding, in GEE and access to NASA and Copernicus missions' products	Cesar Alvites
10:30 – 11:30	**Break**	-
11:30 – 12:30	Develop of the backend code of the GEE web application	Cesar Alvites
12:30 – 14:00	Develop of the frontend code of GEE web application	Cesar Alvites