Plan Overview

A Data Management Plan created using DMPTool

DMP ID: https://doi.org/10.48321/D1C08D

Title: Projeto ForestEyes - Cidadãos monitorando desmatamento em Florestas

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Template: Digital Curation Centre

Project abstract:

The conservation of Tropical Forests is a key issue due to their importance in the global ecosystem since they contain great biodiversity, carbon storage, rainfall regulation in adjacent regions, and indigenous peoples sheltering.
Unfortunately, millions of hectares of tropical forests are lost each year through deforestation and degradation for different and complex reasons.
In this research project, a proposal to enhance a novel monitoring system prototype, called ForestEyes, is presented, which aims to combine citizen science and machine learning in detecting deforestation.
Citizen Science allows ordinary volunteers to collaborate by inspecting remote sensing image segments over a forest region, seeking to detect deforested or degraded areas, thus participating in a scientific experiment aimed at improving the planet's sustainability, also acquiring more awareness and involvement with the major issue.
Machine Learning techniques will be applied in a forest area by using trained databases with samples labeled by volunteers in the previous phase, expanding the coverage for the detection area.
Initial experiments over six official campaigns, demonstrated through solid published scientific works, obtained more than 81,000 contributions from 644 different volunteers, allowing to build of a solid training base for classification models, whose results were compared with the official program for monitoring the Brazilian Legal Amazon (PRODES).

The methodology developed proved to be promising, both from the point of view of the volunteer's accuracy and the classification techniques applied.

This project proposes improvements to the aforementioned project by expanding the application's database and investigating the use of new remote sensing images from multiple optical and radar sensors (SAR), and different regions and periods of time, which implies scientific and technological challenges in the pre-processing, citizen science and machine learning phase.

It is also intended to improve the remote sensing image segmentation process, as well as apply super-resolution techniques to the images.

Start date: 04-02-2019

End date: 12-19-2026

Last modified: 01-22-2024

Copyright information:

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Remote Sensing Images from satellites, normally in GEOTIFF format.

Mask images created applied to original images.

Segmented images to be investigated by citizen science and machine learning.

Original data will be collected directly from institucional repository

Other images will be created with a GIS or segmented algorithms by the project team.

Geolocation for every image.

ID for each segment of image.

Labeled image pixels and segments for the groundtruth

The identity of participants volunteers will not be registered.

All acquired or created images have free access.

All acquired or created images have free access, but in every case the original authors will be depicted.

Data space in public clouds will be used for backup.

There are no sensible data, but all of them will be protected by the storage platform used.

There are no need to destroy the data periodically.

The data/images needs to be storage by a decade, for research purposes.

The data could be shared to other similar projects

Question not answered.

The researchers and principal investigators will be responsible to implement the DMP

There are no extra needs to implement the plan

Planned Research Outputs

Image - "Classified segments of images by volunteers in a citizen science plataform"

Labeled images by volunteers using zooniverse platform.

Image - "Classified segments of images by machine learning"

Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Classified segments of images by volunteers in a c ...	Image	Unspecified	Open	None specified		Creative Commons Attribution 4.0 International	None specified	No	No
Classified segments of images by machine learning	Image	Unspecified	Open	None specified		Creative Commons Attribution 4.0 International	None specified	No	No