

I. DATA MANAGEMENT PLAN:

1. What data did you collected or created?

As this research was dependent on Secondary data for performing analysis. The data which was used/collected for this research project is as follows:

- (i) Sentinel-1 GRD Raster (22nd July 2020 and 26th October 2020)
- (ii) Sentinel-2 Cloud Free raster for the year 2020 (27th July 2020)
- (iii) Sentinel-2 Cloudy Raster for the year 2020 (25th October 2020)
- (iv) PRODES Deforestation Data as Shapefiles for the year 2020

2. What is the Source of Secondary Data used for this Research?

This research was dependent on secondary sources of dataset which includes deforestation, Sentinel-1 and Sentinel-2 dataset. The sources of the data are detailed out as follows:

- (i) <https://scihub.copernicus.eu/>
- (ii) <https://search.asf.alaska.edu/#/>
- (iii) <http://terrabrasilis.dpi.inpe.br/downloads/>

3. In what way(s) are you permitted to use the data (e.g. only for own analysis, disseminate original data, disseminate derived data, etc.)? Describe briefly.

Since all our data sources are derived from open data platforms, there are no limitations in using them for analysis and disseminating the results, as long as referring to the data source. Data Referencing has been ensured for all the platforms, for providing free access to data.

4. Are you developing any software or code as part of this research?

This research involves development of Deep Learning Algorithm for the fusion of Sentinel-1 and Sentinel-2 data for deforestation mapping. The code was prepared in Python language and the software used for running the code was Google Colab Pro+ in a Jupyter Notebook environment.

5. How did you planned short-term data storage arrangements for the duration when you were pursuing your research?

Being a student at the University of Twente, the student account mail on Gmail gives us unlimited access to Google Drive for the time we are students. Hence, for short-term data storage specifically for the duration of my research, I used Google Drive which was linked to my Student Account for my short-term data storage.

6. Is there some documentation prepared to keep your data understandable to yourself and others?

Yes, a Readme file has been prepared within every folder which would give information about the availability of different datasets within a specific folder.

7. What is your long-term data preservation strategy?

Google Drive can only be used for short-term data storage because the account will be deleted once we are no more a student. Hence, for long-term data storage and preservation, we will be using the ITC Repository and uploading our data there (\\ut152200\\StudentData), which can be accessed in the ITC building when connected to “eduroam” wifi connection. Further, there is a “readme” text file inside every folder, which explains briefly about the dataset.

8. Will you share the source code of this research publicly? If Yes, where?

One of the reasons why I used Sentinel-1 and Sentinel-2 datasets in this research is because of its freely availability. To make sure this research is beneficial for all, I have uploaded it on Github privately. As I propose to write a paper out of this research, I will make the Github repository public after I have published my paper.

9. What tools, instruments, equipment, hardware or software did you use to perform the analysis?

Different software’s were used in this research which is mentioned in Table 3 as follows:

S.NO.	SOFTWARE USED	PURPOSE
1.	Google Colab Pro+	Deep Learning
2.	SNAP	SAR Data Pre-Processing
3.	ArcMap	Geospatial Analysis
4.	QGIS	Geospatial Analysis
5.	Mendeley	Reference Manager

II. ETHICAL CONSIDERATIONS

In this research, there are no ethical aspects that need to be considered as there is no Primary Data Collection involved and the Research is primarily based on Secondary Data Collection. Further, when obtaining information from the European Space Agency Copernicus Programme, specifically from Sentinel-1 and Sentinel-2 sensors, I have ensured citation of the references. Apart from this, I have also cited PRODES, the Amazon Deforestation Monitoring Project from where I get the Deforestation data to be utilized for Deep Learning Architecture as part of the Algorithms being developed in this research.