1. Overview

This project was developed using a dedicated Conda environment named '*deforestation*'. The environment ensures reproduceable experimentation and consistent package versions.

2. System Requirements

- **Operating system**: macOS
- **Package manager**: Conda (Anaconda/Miniconda)
- **Python version**: 3.9.15
- **Environment name**: deforestation

3. Creating the Conda Environment

To allow complete reproducibility an environment.yml that specifies all Conda and pip dependencies was created (found in the folder 'ReproduceBaseline').

To create environment:

conda env create -f environment.yml

To activate it:

conda activate deforestation

4. Dependencies

These dependencies support satellite image processing, raster manipulation, model training, evaluation and visualisation.

4.1. Conda Dependencies

Key packages include:

- **Cython**: C-extensions for optimised computation
- **HDF5/h5py**: Handling large datasets
- **OpenBLAS**: Numerical linear acceleration
- **IPython/Jupyter**: Notebook based development
- **OpenSSL**: Security and networking
- **Zlib,LZMA,libcul,expat**: Data compression and parsing support

4.2. Pip Dependencies

Machine Learning / Deep Learning

- TensorFlow (CPU and macOS versions)
- Keras
- EfficientNet
- Segmentation-models

- Imgaug
- ml-dtypes

Geospatial and remote sensing

- Rasterio
- Shapely
- rioxarray
- PyProj
- Tifffile

Data Processing and Visualisation

- NumPy
- Pandas
- Matplotlib
- Scikit-learn
- Scikit-image

Utilities

- tqdm
- requests
- oauthlib
- protobuf