



High Quality Labeling

Andrea Elizabeth González Ramírez

September 28, 2023



Mantle Labs

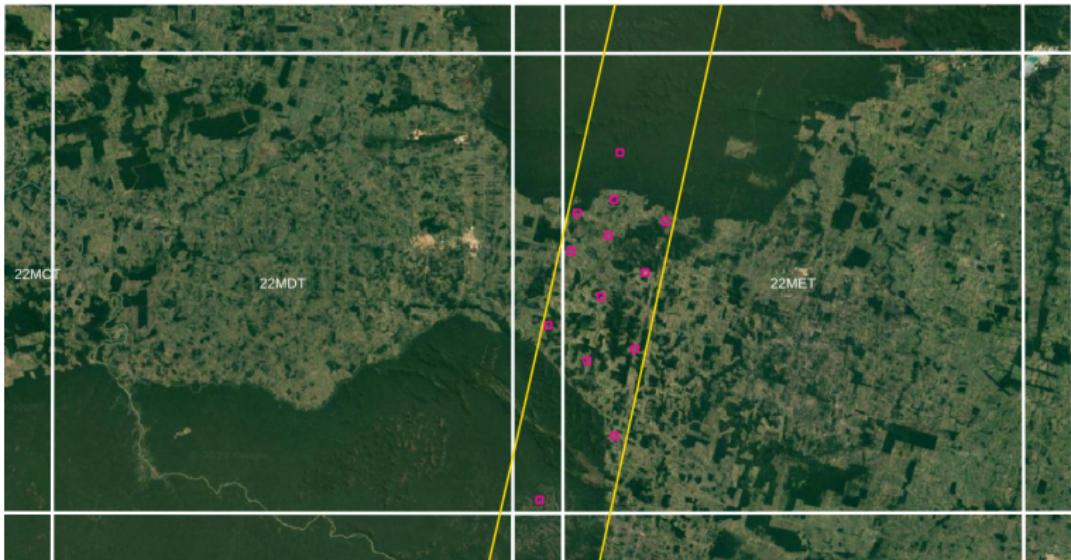


Figure 1: All polygons over area of interest: 22MET overlap.



An aerial satellite photograph of a coastal region. The image shows a mix of agricultural land with rectangular fields, some green vegetation, and built-up areas. A major road runs along the coast on the right side. In the center, there's a large industrial or institutional complex with several buildings and parking lots. The water of the sea is visible on the far right.

Dataset

Implementation details

Dataset	
Tiles	22MET
Number of polygons	11
Time observation	2019-05-01
	2019-09-30
Visualization of TC images	0-3000

Table 1: Description of the dataset.

Classes	
Fully Cloudy	FC
Partly Cloudy	PC
Full Shadow	FS
Partly Shadow	PS
Low quality	LQ
Medium quality	MQ
High quality	HQ

Table 2: Description of the labeling.



An aerial satellite photograph of a coastal region. The landscape is a mix of green agricultural fields, some with distinct grid patterns, and brown, undeveloped land. A network of roads cuts through the terrain, with a major highway running along the coast on the right. In the lower center, there's a cluster of industrial or institutional buildings with red roofs and large parking lots. To the far right, a strip of coastline meets a dark blue sea. The word "Labeling" is overlaid in a large, white, serif font in the upper central part of the image.

Labeling

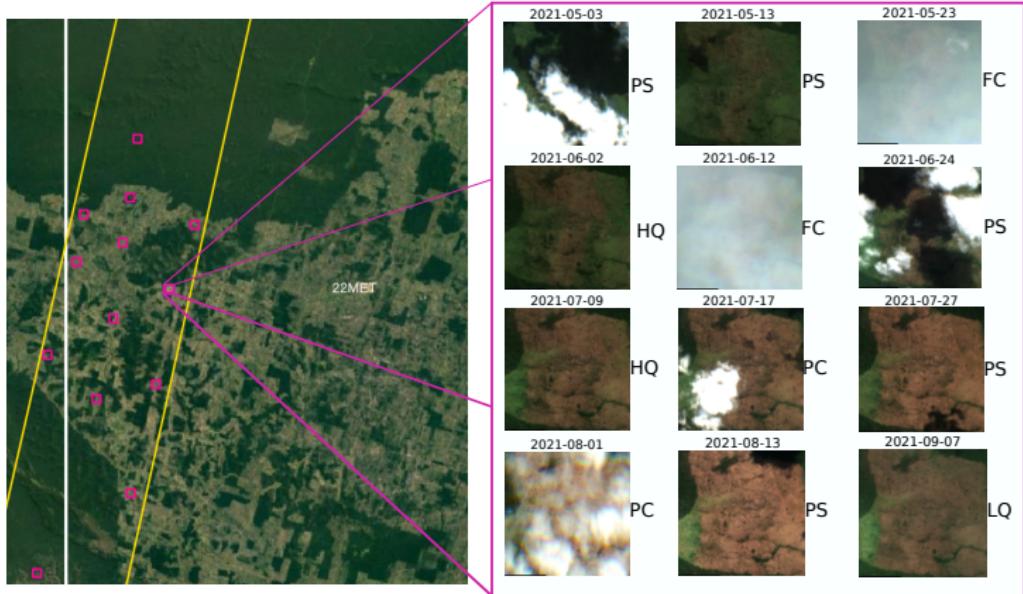


Figure 2: Temporal observation of the polygon 0.

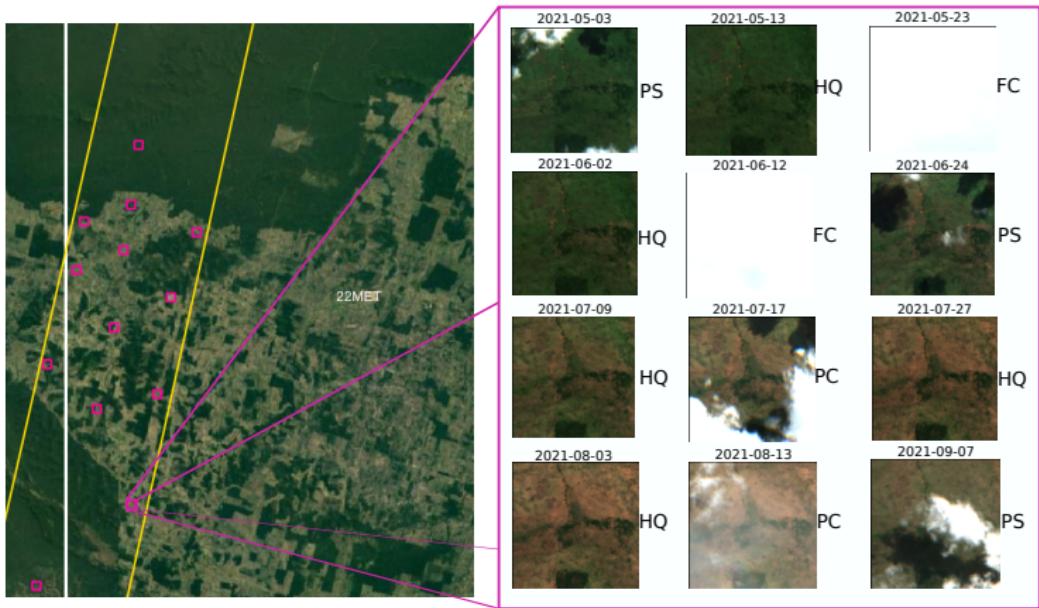


Figure 3: Temporal observation of the polygon 2.

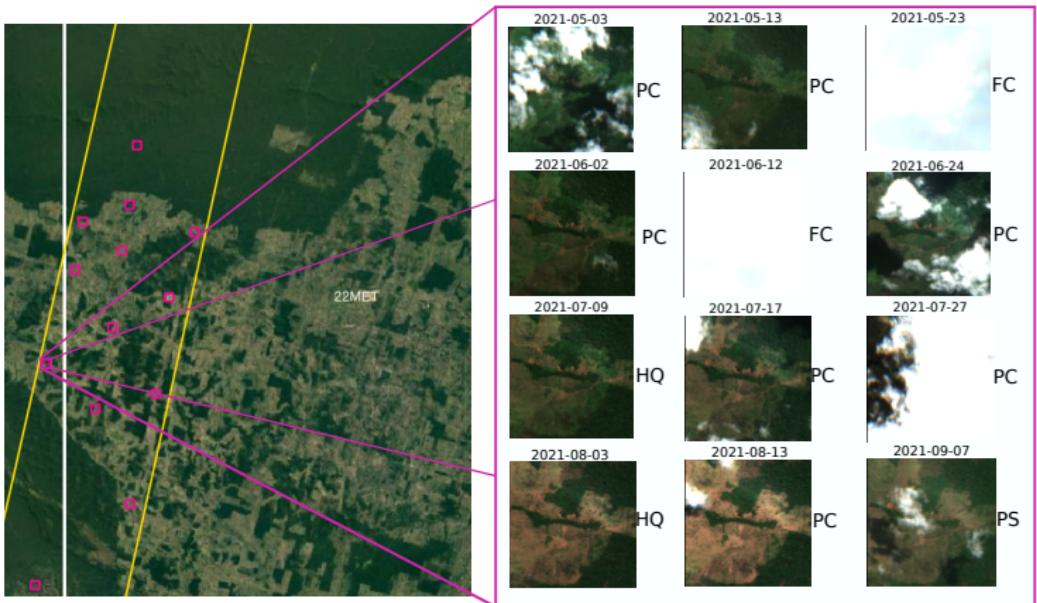


Figure 4: Temporal observation of the polygon 4.

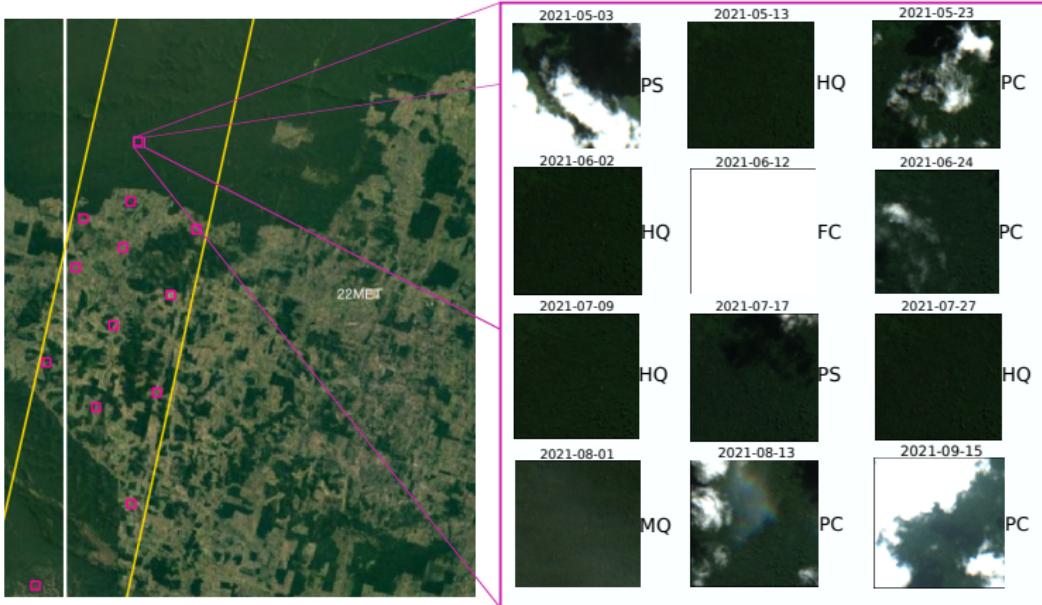


Figure 5: Temporal observation of the polygon 11.

An aerial photograph showing a coastal area. The terrain is a mix of green fields, some with grid patterns, and brown, dry land. A major highway runs diagonally from the bottom left towards the top right. In the center, there is a large industrial or construction site with several buildings, some with red roofs. To the right of the highway, there's a strip of land with more buildings and a swimming pool. The bottom right corner shows the edge of a body of water.

Training

Implementation details

Parameter	Value
Training size	90%
Testing size	10%
Number of observations with HQ Classes	30 7

Table 3: Dataset split.

Hyperparameters	
Epochs	10000
Batch size rate	0.1*
Units in hidden layers	3
Learning rate	1e-5
Optimizer	Adam
Loss	MSE

* of each class

Table 4: Setting up of the Autoencoders hyperparameters.



Cinvestav



Mantle Labs

An aerial satellite photograph of a coastal region. The landscape is a mix of green agricultural fields in the interior and along the edges, and a developed coastal area on the right. A major highway runs diagonally across the image. In the bottom center, there's a large industrial or construction site with several large buildings and parking lots. The coastline is visible on the far right, meeting a dark blue sea.

Inference

An aerial photograph of a coastal region. The landscape is a mix of green agricultural fields, some with irrigation patterns, and brown, dry land. A network of roads cuts through the terrain, with a major highway running along the coast. On the right side, there's a developed area with several buildings, including what looks like a hotel complex with a swimming pool. The coastline is visible on the far right, showing the transition from land to sea.

Thank you