



# High Quality Labeling

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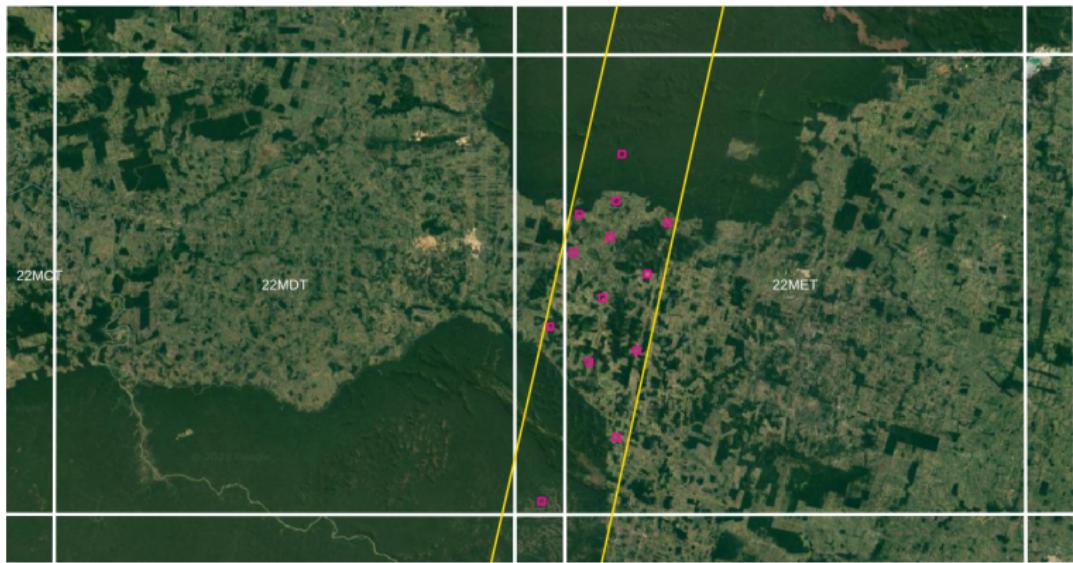


Figure 1: All polygons over area of interest: 22MET overlap.



# Updates

- Computed the Brightness Index
- Computed the error with Euclidean distance



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 "Dataset" is overlaid in white text in the upper central area.

Dataset

# Dataset

Dataset		Classes
Tiles	22MET	Fully Cloudy
Number of polygons	12	PC
Time range	2021-05-01	Partly Cloudy
	2021-09-30	Full Shadow
Total number observations	61	Partly Shadow
Number with HQ observations	34	Low quality
Number of spectral bands	12*	Medium quality
Number of features	13 (bands + ndvi)	High quality

\*All spectral bands except B10

Table 1: Description of the dataset.

Table 2: Description of labels.

# Brightness Index (BI)

$$BI = \sqrt{\frac{(B4^2 + B3^2 + B2^2)}{3}} \quad (1)$$



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An aerial satellite 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 prominent highway running along the coast. On the right side, there's a developed area with several buildings, including what looks like a resort or industrial complex. The coastline is visible on the far right, showing the transition from land to sea.

Labeling

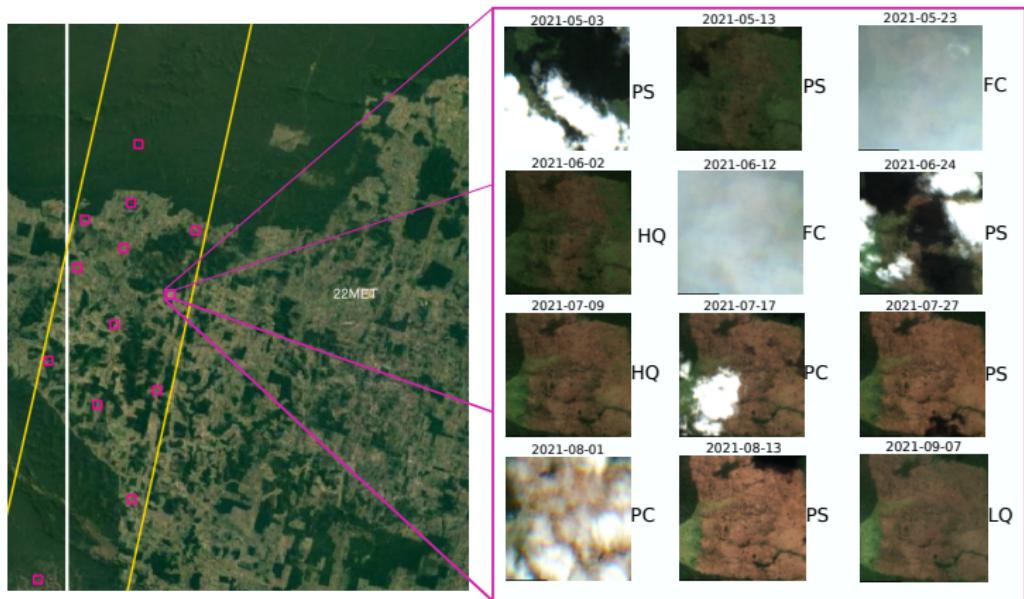


Figure 2: Polygon 1. Examples of some observation/labels.

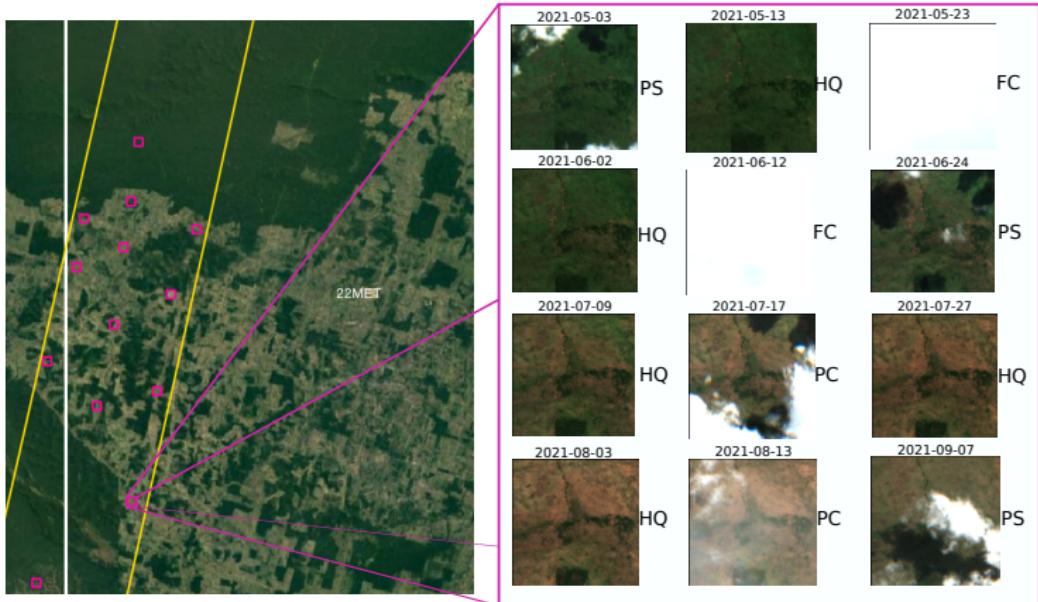


Figure 3: Polygon 2. Examples of some observation/labels.

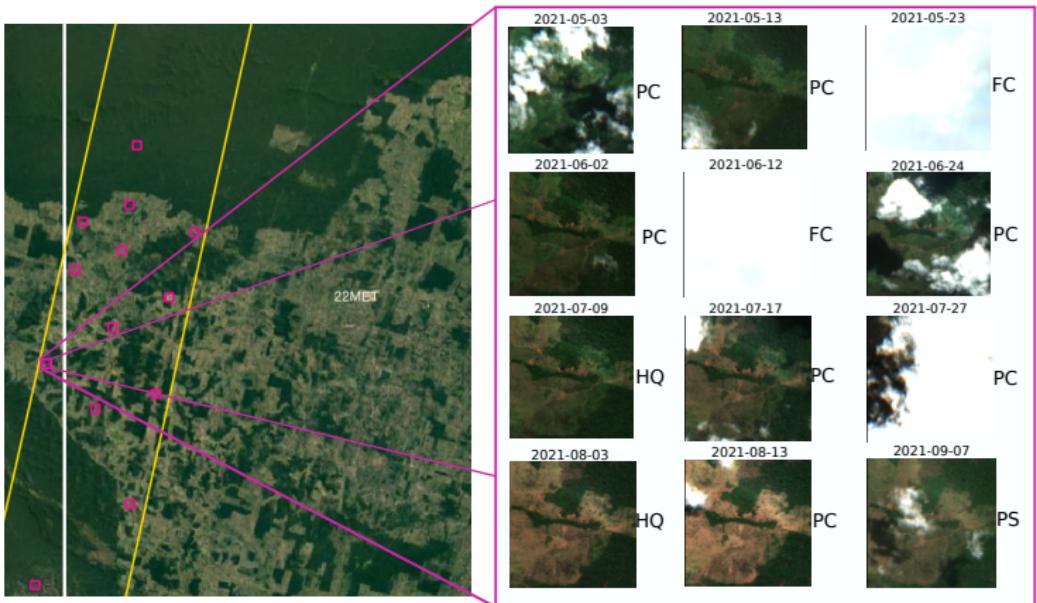


Figure 4: Polygon 3. Examples of some observation/labels.

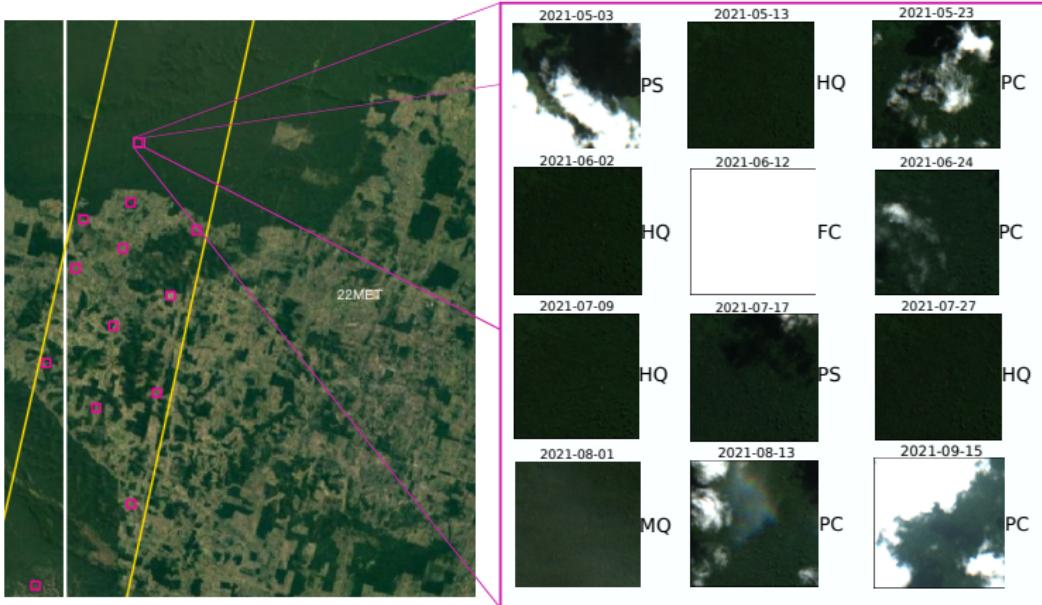


Figure 5: Polygon 4. Examples of some observation/labels.

An aerial satellite 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. In the lower-left foreground, there is a cluster of buildings, possibly a industrial or residential complex, with several large tanks or reservoirs nearby. The coastline is visible on the right side, showing a sandy beach and the blue sea.

Training

# Implementation details of the AE

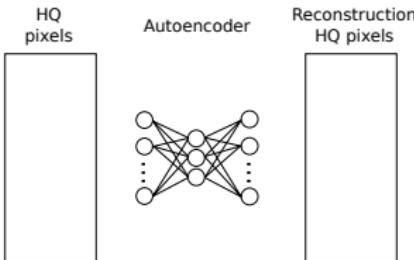


Figure 6: Workflow of training.

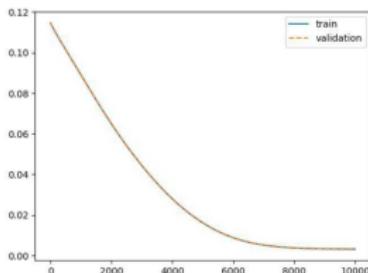


Figure 7: Loss function.

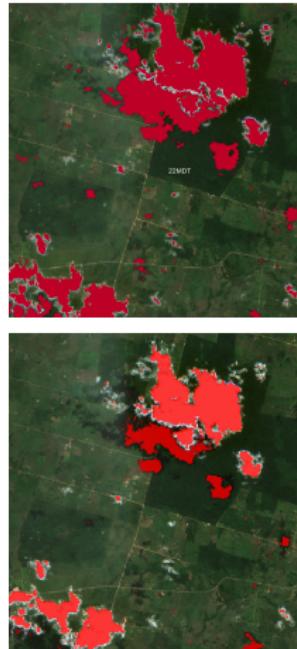
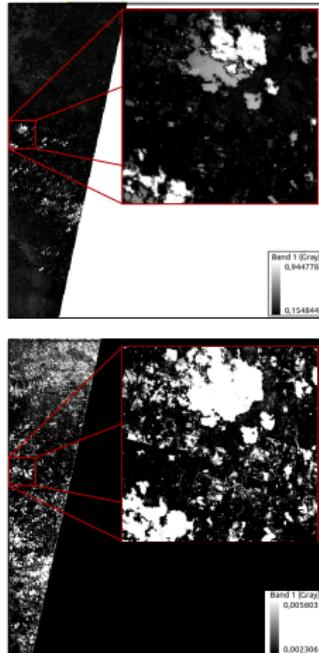
Hyperparameters	
Training size	90%
Validation size	10%
Epochs	10000
Batch size	0.1
Units in hidden layers	3
Learning rate	1e-5
Optimizer	Adam
Loss	MSE

Table 3: Setting up of the Autoencoders hyperparameters.

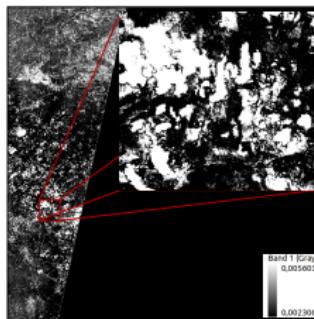
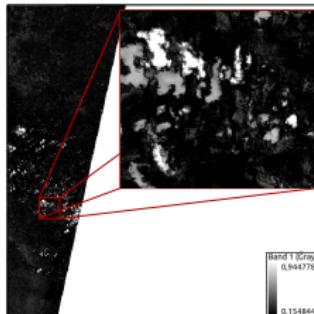
An aerial satellite photograph of a coastal region. The landscape is a mix of green agricultural fields, some brown and dry land, and a network of roads. A large industrial or construction site with several large buildings and parking lots is visible in the lower-left foreground. To the right, a long stretch of coastline features a sandy beach and a line of buildings, possibly a resort or residential area. The water is a deep blue.

Results

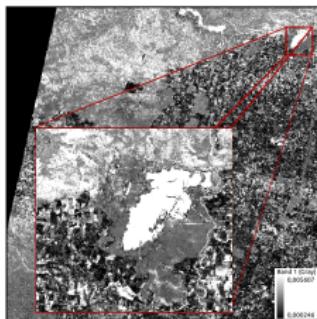
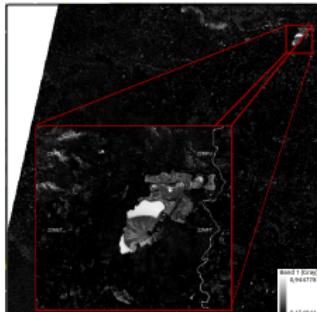
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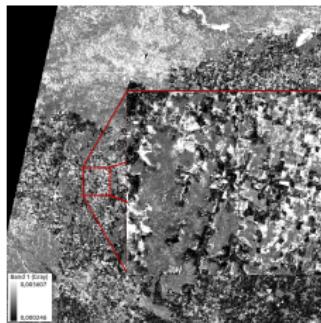
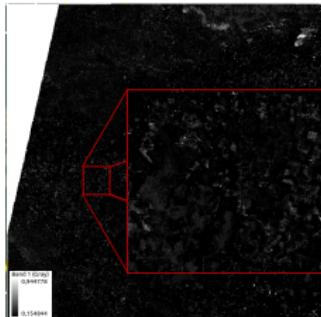
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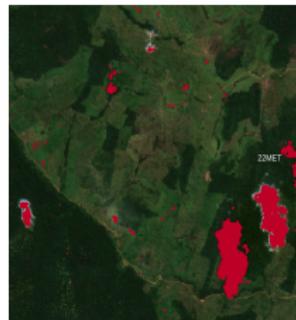
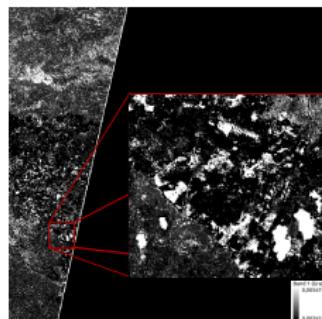
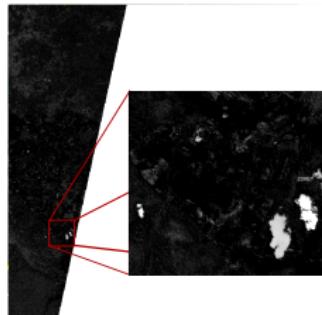
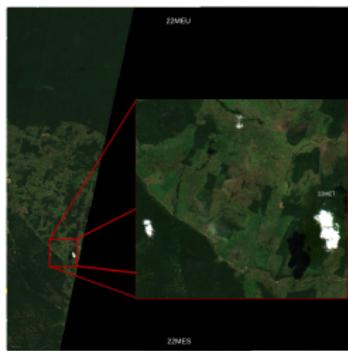
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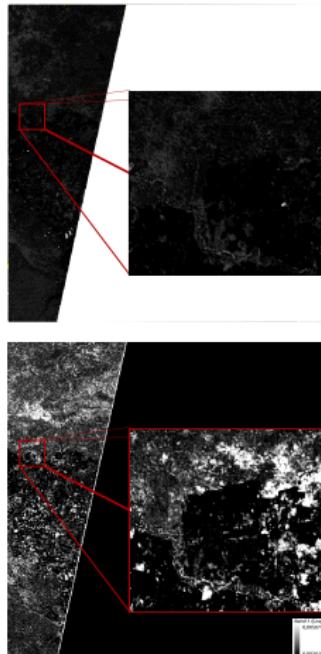
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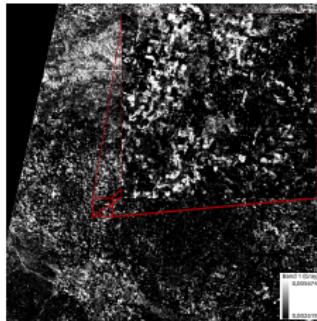
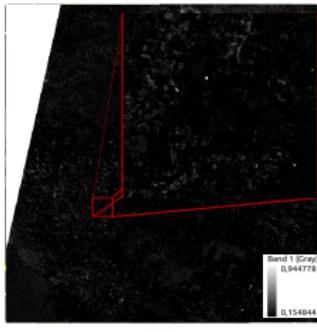
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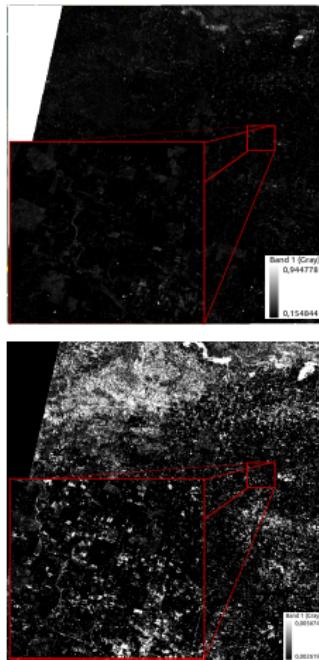
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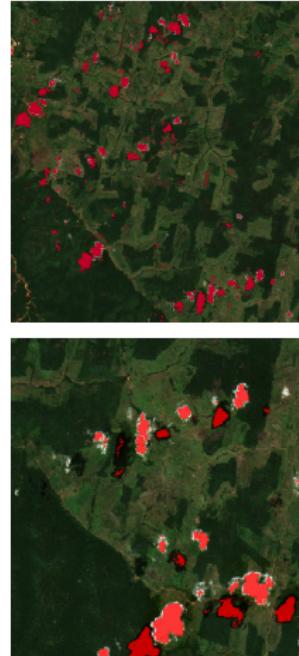
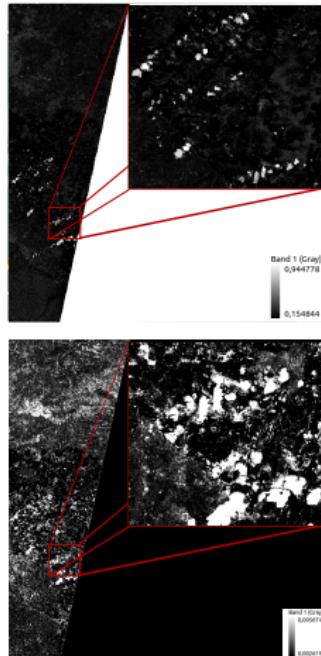
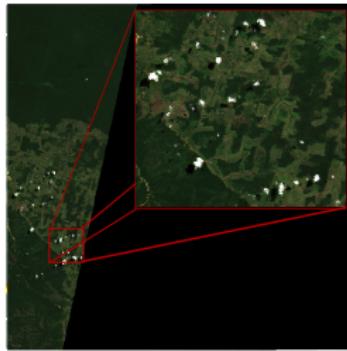
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# Date: 2021-05-30



# Date: 2021-06-02



# Date: 2021-06-02

