Satellite Imagery

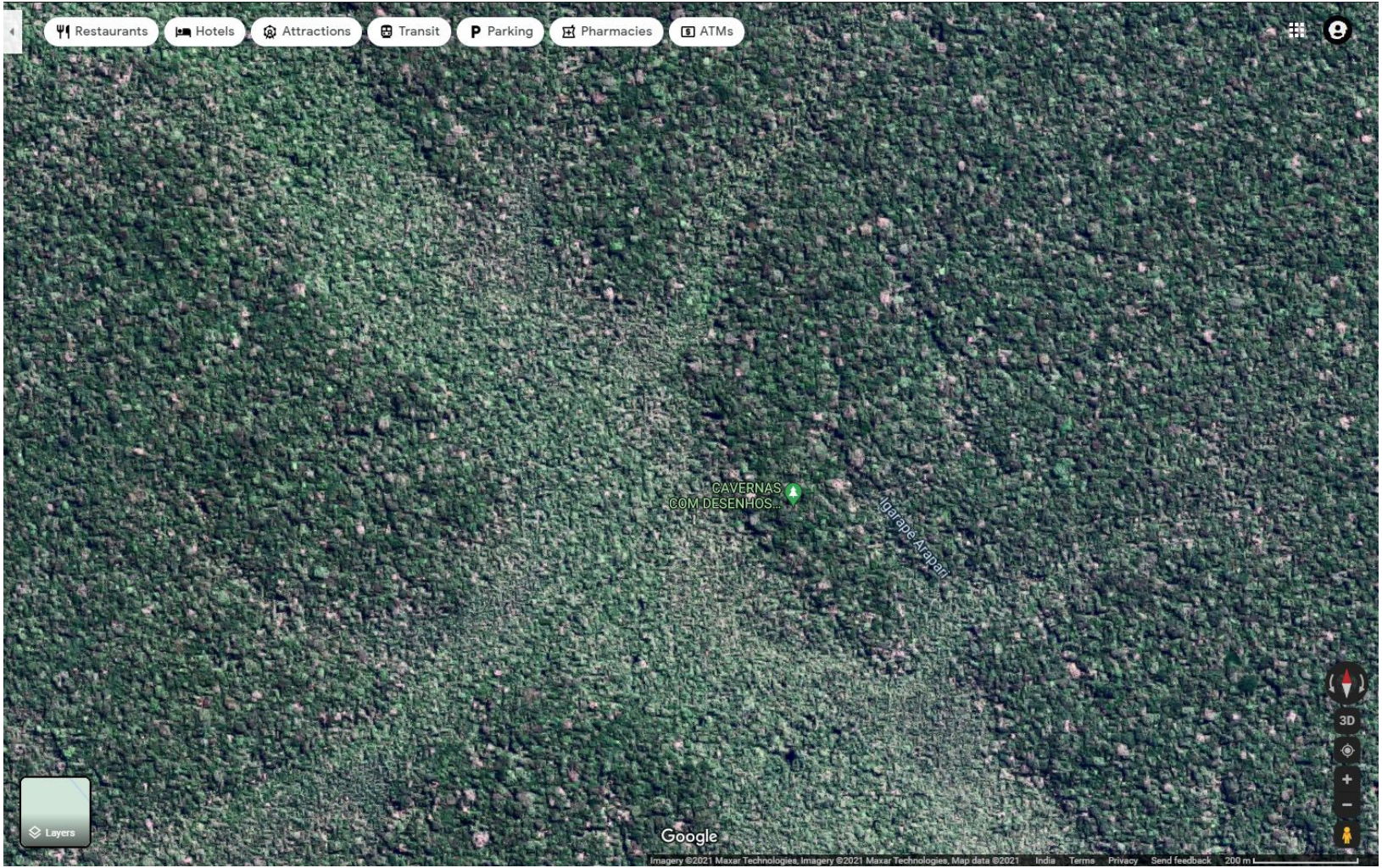
assisting in

Crop yield Prediction

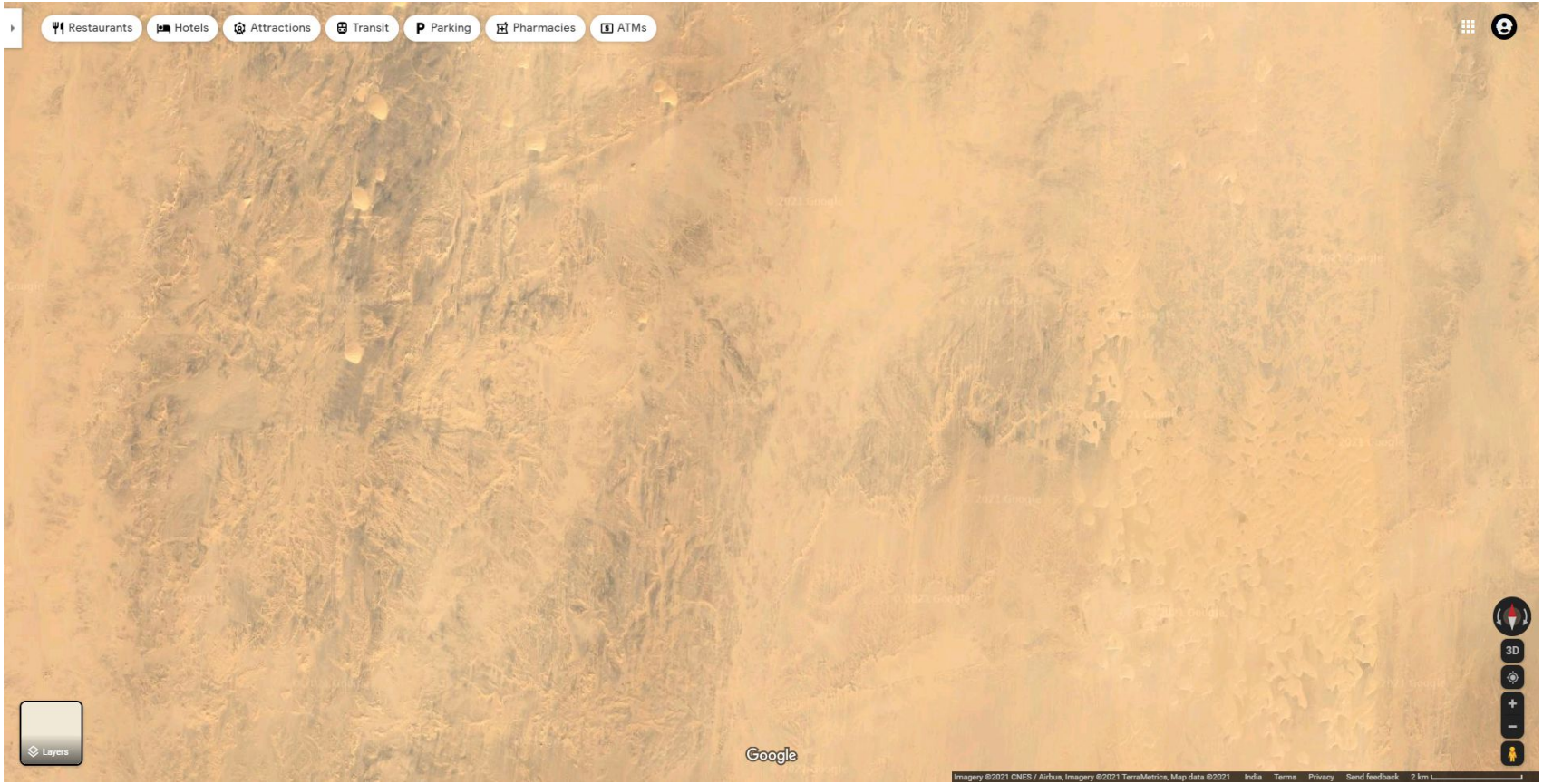
Observing Satellite Images with human eye

Following are satellite images of **2** places on the planet,

The Amazon Rainforest, and
The Sahara Desert



PES UNIVERSITY


Restaurants
Hotels
Attractions
Transit
Parking
Pharmacies
ATMs
Layers
Google
3D
Imagery ©2021 CNES / Airbus, Imagery ©2021 TerraMetrics, Map data ©2021
India
Terms
Privacy
Send feedback
2 km

We (humans) can easily tell by **looking** at both the images, which place is which.

The greener the place is, more likely it is for a crop to grow and sustain.

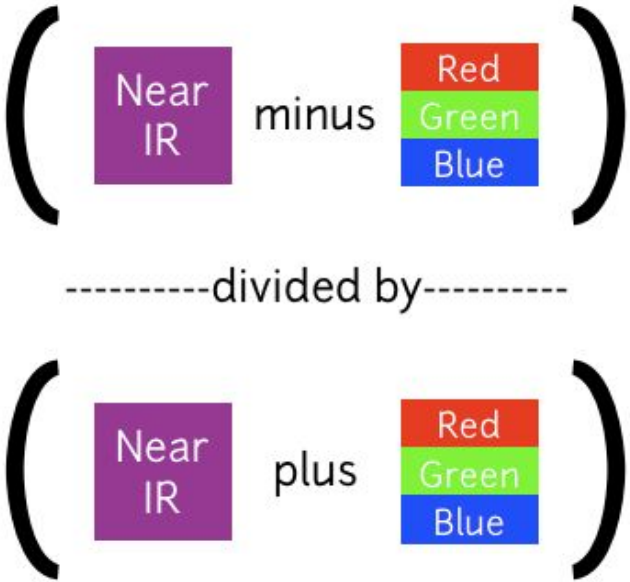
“greenness measurement”

There are various indices used to calculate various metrics from the satellite image data.

One such index is used to determine the **greenness**.

This index is called **Normalized Difference Vegetation Index**.

Calculation of NDVI



Name	Units	Scale	Wavelength	Description
B1		0.0001	0.435-0.451 µm	Band 1 (ultra blue) surface reflectance
B2		0.0001	0.452-0.512 µm	Band 2 (blue) surface reflectance
B3		0.0001	0.533-0.590 µm	Band 3 (green) surface reflectance
B4		0.0001	0.636-0.673 µm	Band 4 (red) surface reflectance
B5		0.0001	0.851-0.879 µm	Band 5 (near infrared) surface reflectance
B6		0.0001	1.566-1.651 µm	Band 6 (shortwave infrared 1) surface reflectance
B7		0.0001	2.107-2.294 µm	Band 7 (shortwave infrared 2) surface reflectance

Value of NDVI can range from -1 to +1

+1 being very green

-1 being not green (red)

- Therefore, we collect satellite image data of the input coordinates.
- We determine/measure the “greenness” of the area.
- We provide this **greenness measurement (NDVI)** to the ML model.
- ML model does its job and gives the final crop that can be grown