

UAV Ground Detection

Distinguish Tree Species

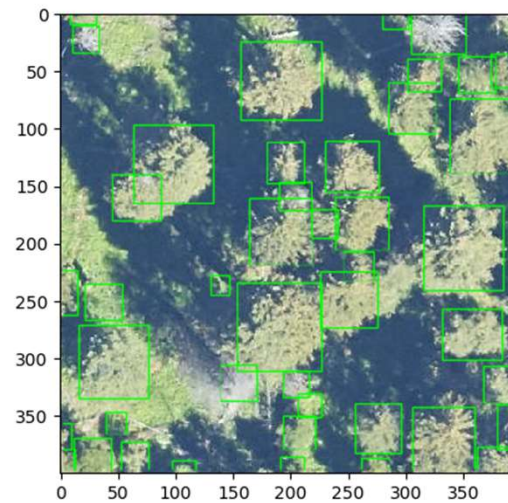
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Project 17

Detecting Tree model

Deep Forest

- Training and predicting individual tree airborne RGB image



<https://deepforest.readthedocs.io/en/latest/landing.html>

Detect Objects in Real Time

Using OpenCV and Python

- When using UAV ground detecting we need to use real time object detection
- OpenCV?
- library of programming functions mainly aimed at real-time computer vision.



Detect Objects in Real Time

Using OpenCV and Python

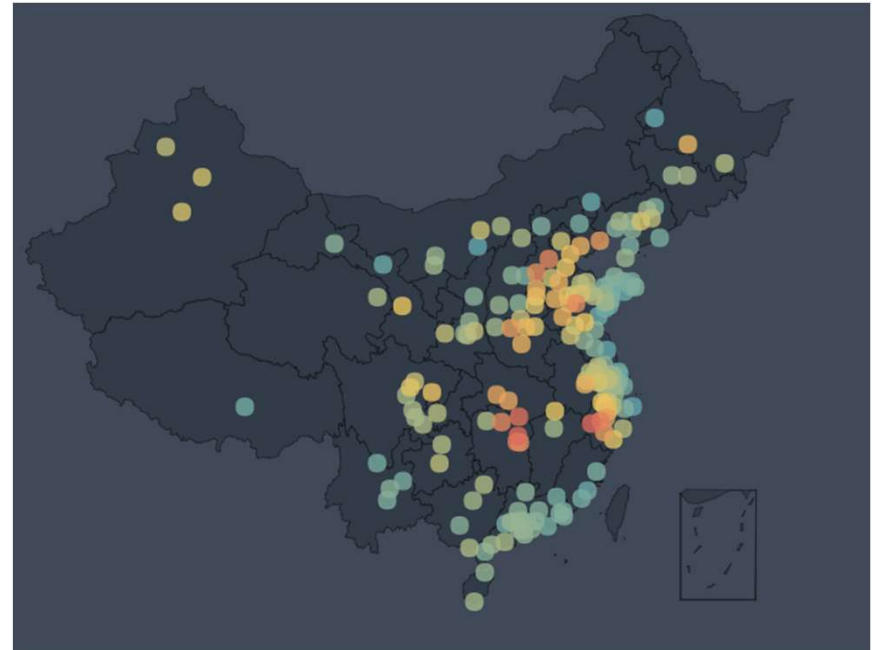
- When using UAV ground detecting we need to use real time object detection
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- library of programming functions mainly aimed at real-time computer vision.



Tree data with GPS

We need to use tree data with GPS

- Then we can make GEO charts.
- Maybe we can use some libraries like pyecharts.
- But, how to get this data?



Collecting data using UAV

Collecting data using UAV

- But we think it is hard to use UAV in Korea forest and gathering data.
- So, we try to find some new method.
- Finally, we find a solution



Google map trick

We'll use google map api

- We can get satellite picture of forest.
- It contains RGB and GPS data.
- Then now, we have modeling data.



Plan

Step 1

Get data from gMap

Make modeling system

Step 2

Classify data
(Distinguish Tree Species)

Modeling data

Step 3

Real time receive data
from UAV

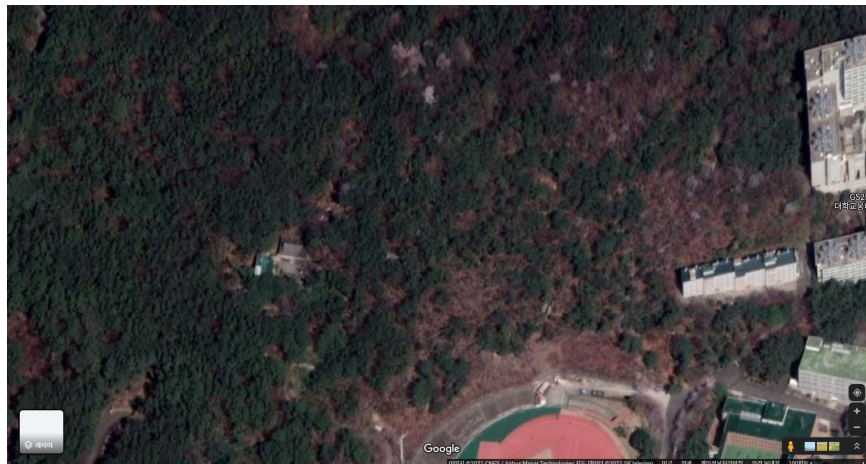
Add/Del data from GEO
chart

Step 1

How do we collect map data?



Google Maps Platform



From Google Map API

kaggle



Covertypes Data Set

Download: [Data Folder](#), [Data Set Description](#)

Abstract: Forest CoverType dataset



Data Set Characteristics:	Multivariate	Number of Instances:	581012	Area:	Life
Attribute Characteristics:	Categorical, Integer	Number of Attributes:	54	Date Donated	1998-08-01
Associated Tasks:	Classification	Missing Values?	No	Number of Web Hits:	334249

External Dataset

NEXT

What about UAV?

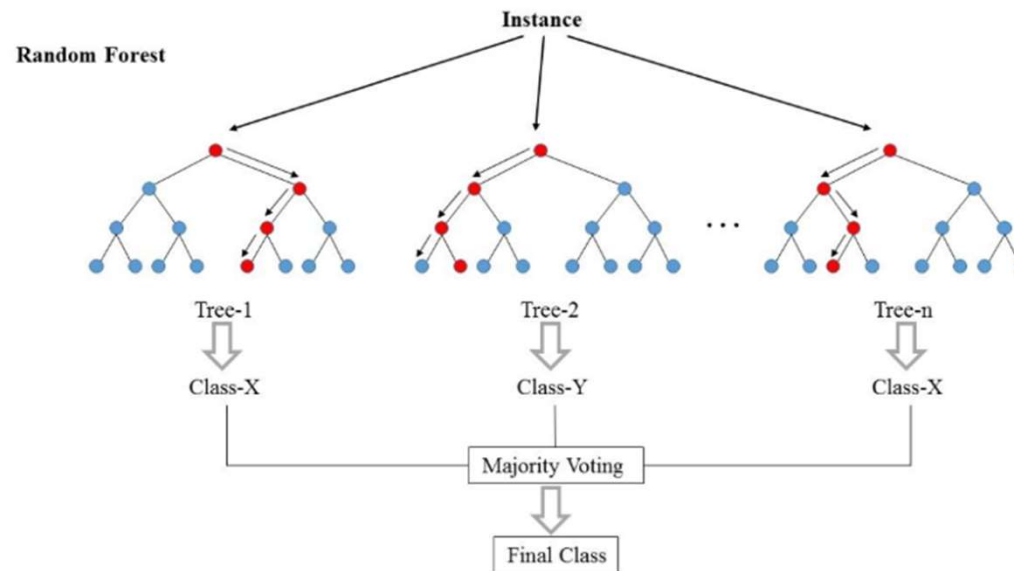


We have to build drones

Step 2

Classify data
(Distinguish Tree Species)

Modeling data

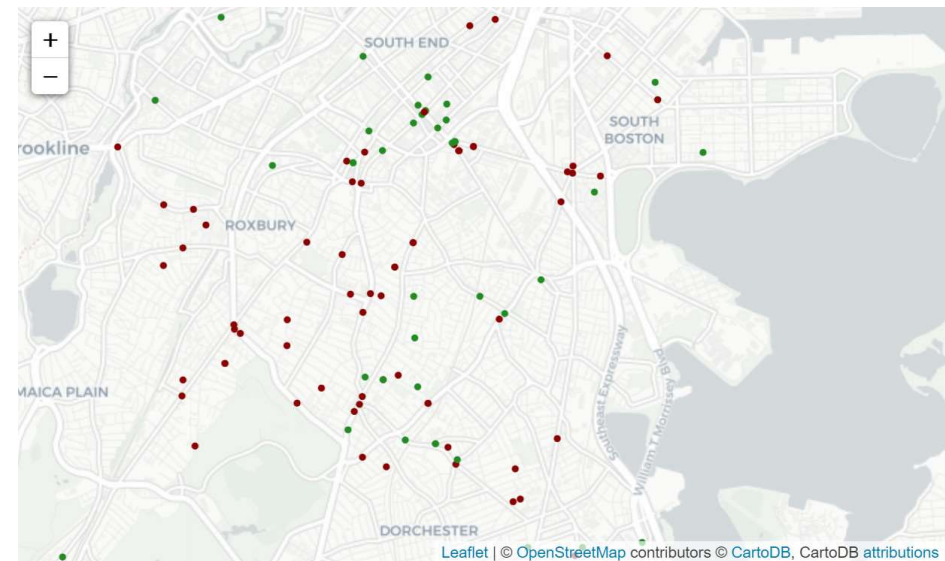


Classification

Step 3

Data Visualization

	latitude	longitude	magnitude
0	65.193300	-149.072500	1.70
1	38.791832	-122.780830	2.10
2	38.818001	-122.792168	0.48
3	33.601667	-116.727667	0.78
4	37.378334	-118.520836	3.64
...



Marker on Map

Thank you

Questions?

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