UDYAM'22

MOSAIC

PROBLEM STATEMENT

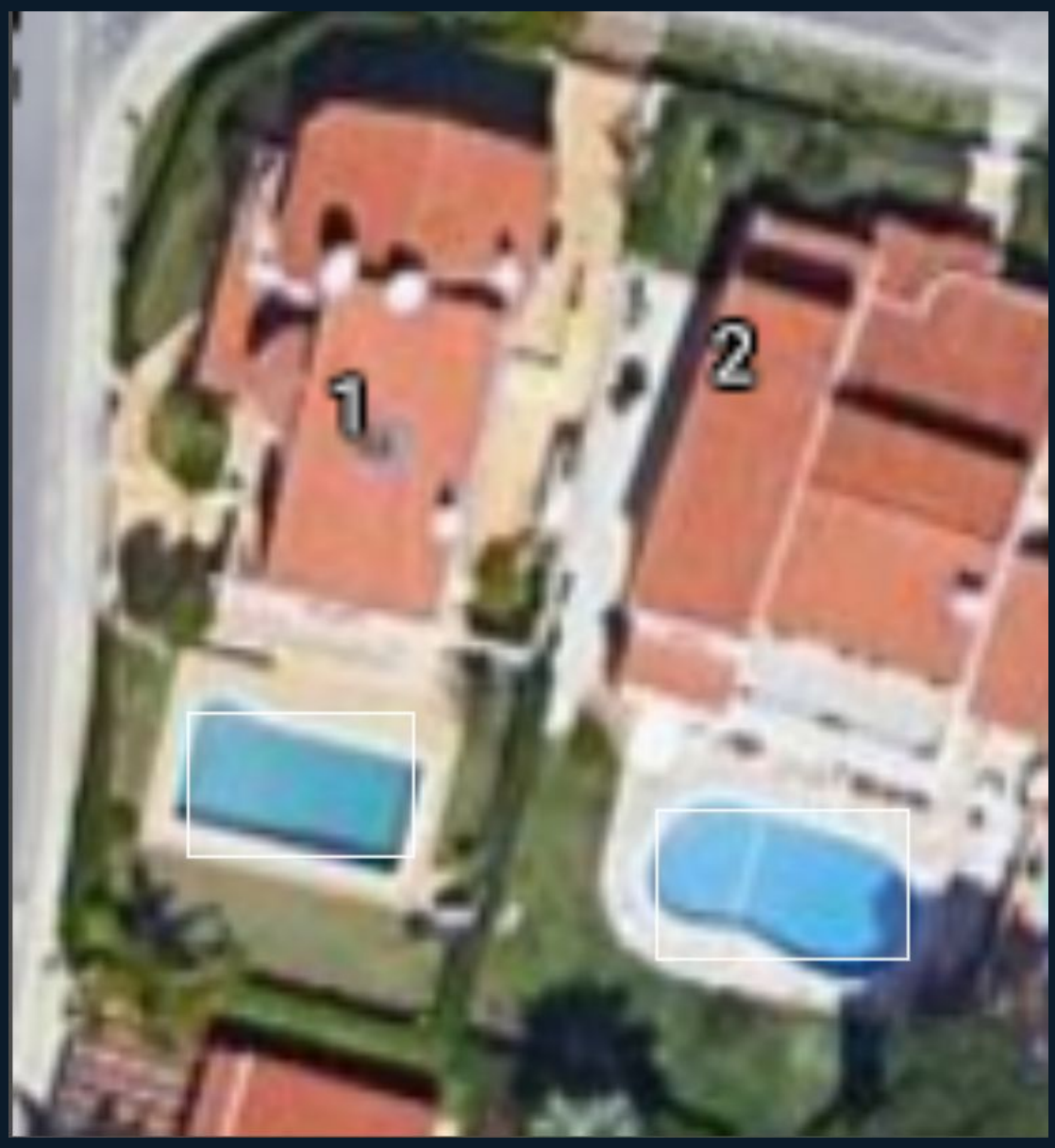
Round 2

Satellite images are a precious resource in the aftermath of natural disasters such as hurricanes and tsunamis, where they can be used for risk assessment and disaster management. In order to provide timely and actionable information for disaster response, it is essential to identify impacted areas and accessible roads in post-disaster scenarios.

One such example can be of finding the nearest source of water in case of large forest fires. Naturally occurring water bodies are often covered by maps but man made structures such as swimming pools are often missed out and might be an easily accessible source.

The problem statement for Round 2 of Mosaic'22 is to segment out swimming pools present in a given aerial image.

A sample dataset will be given, containing images of various sizes, zoom percentages and quality. And the labels file, for each image with swimming pools in it there is a corresponding PASCAL VOC annotations file. However, you are free to use any external dataset to train your models.



Evaluation:

You will be provided with a set images on which your code will have to detect/segment out the pools. The marking scheme for detecting (using bounding boxes only) or segmenting the pools are as follows:

1. **+5** for each pool detected/segmented if the area of the bounding box or segmented area is in **between 1 and 2 times (both included)** the area of the pool.
2. **+3** for each pool detected/segmented if the area of the bounding box or segmented area is in between **0.6 and 1 times (both included)** the area of the pool.
3. **0** for any other detection or segmentation where the area detected is **< 0.6 and > 2 times** the area of the pool
4. **-1** for each false detection, i.e showing pools where they do not exist.

PS: The segmentation method of extracting pools from an image might have a lot of noise and may result in your team losing a lot of points.

UDYAM'22

Submission Instructions:

1) The deadline for the PS submission is 11th April 23:59 pm.

2) Each team has to mail the following files in a folder to mosaic22.udyam@gmail.com (don't forget to give access to your files on this mail id)

- **main.py** file which would take input all images from a folder called "swimming_pools" without the quotes, as input and give the corresponding output to each input image
- **model.h5** file for the trained model.
- And other files if required.

3) The subject of the mail should be in the format **TeamName_Round2**.

4) Only one submission per team will be accepted.

5) Any additional feature if made needs to be clearly mentioned in the mail..

- Bonus points to be awarded for early submissions.

Rules/Guidelines for submission

1) The organizers reserve the right to change the rules as they deem fit. Change in any rules, if any will be notified on the Website and the Whatsapp and Discord groups.

2) Each team's code will be verified by coordinators and should not be a complete match to others. In case of Suspected cheating, the team will be immediately disqualified.

3) The participation certificate will be awarded to teams scoring at least 20 points on our test images.

Dataset:

https://www.kaggle.com/datasets/cici118/swimming-pool-detection-algarves-landscape

UDYAM'22

Contacts:

R Tharun Gowda : 7349595531
Yash Sahijwani : 7303260400
Rishabh Arya : 9559317020
Payal Pote : 9307261414