TRIFORK.

Problem description

We're building a model for object detection. We want to detect people wearing helmets on industrial facilities, to make sure workers comply with security measures.

However, we realized that our images doesn't have the same dimensions. This is why we want to resize them in order to all have the same width and height.

The task that you are assigned is to create a script to scale the all images to (width, height)=(284,284), in any language of your choice, with any libraries or dependencies you want[1].

Requirements

The script should accept 3 arguments as inputs:
- The path to the folder where the input images are saved.
- The path to the folder where the input annotations are saved.
- The path where to save the results.

The annotations are in KITTI format. It means that there will be as many files in the images folder as in the annotations folder, and they will match one-to-one by name. E.g. `1234.jpg` will have the annotations specified by the KITTI file `1234.txt`.

Notice that we need to scale not only the images, but also the annotations, which for object detection are bounding boxes. In all cases we want to scale and not crop the images to not miss important information from them.

The results should be saved in the following format, inside the path specified for saving the results:
- A folder `images` should contain the scaled images that are produced.
- A folder `annotations` should contain the scaled annotations that are produced, with names matching the images in the `images` folder, as shown before.

1 We tend to prefer python because it's easy to read and there exist many useful libraries.

Additional Information

You will receive a zip folder with 200 images in `.jpg` format and 200 `.txt` files which are the KITTI annotations for the images.

Help: You will need to find the right horizontal and vertical scaling factors for each image to have the correct dimensions.

Submission

You will have 1 week to submit the assignment from the moment you receive it. This task can be solved in much shorter time, but we want to extend the period of submissions so you can improve it as much as you want.

Please remember that this assignment is what will give us insights on how you reason, and how you code, so it's also a way for showcasing your skills.

Best of luck and let the coding begin!

PS. For the submission we prefer if you could share a GitHub repo, instead of sending the script.