

Resize Shape & Decrease Quality of images of a directory using Python



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In this story, I will try to describe how to resize shape and decrease quality of all images in a directory using Python.



Photo by [energepic.com](https://www.pexels.com/photo/energy-pics/) from Pexels

Why we need this task?

When we collect image to train our Deep Learning model or any purpose, generally we use smartphone or camera. But smartphone or camera captures high regulations images. Sometimes it takes 3 MB to 10 MB or more. For this reason, dataset becomes very large size. When we try to make our dataset for train(data preprocessing), computers can't take the load. So we need to resize the shape or decrease the quality of images. Let's learn, how we can do it easily using some lines of codes.

Steps in Resize Shape & Decrease Quality

1. Import the libraries
2. Import dataset or read direcorey
3. Set new shape or quality

Step 1 : Import required libraries

Here we will use **Pillow**, Pillow is a Python Imaging Library (abbreviated as **PIL**) (in newer versions known as Pillow) is a free library for the Python programming language that adds support for opening, manipulating, and saving many different image file formats. We will import **Image**, **os** and **sys** module.

```
In [1]:  
  
from PIL import Image  
import os  
import sys
```

Step 2 : Set directory location

```
In [2]:  
  
path = '1'
```

Here 1 is the name of a directory. Give your directory or folder location name in side of single quotation. Then run it.

Step 3: Set new shape or decrease quality

> Resize Shape

```
for file_name in os.listdir(path):  
    print("Working on %s" % file_name)  
    image = Image.open(os.path.join(path, file_name))  
  
    x,y = image.size  
    new_dimensions = (x, y)  
    output = image.resize(new_dimensions, Image.ANTIALIAS)  
  
    output_file_name = os.path.join(path, "new" + file_name)  
    output.save(output_file_name, "JPEG", quality = 50)  
  
print("Complete!")
```

To resize the shape of the image, we need to change the value of x and y in *new_dimensions = (x, y)* this line. Here **x is scale factor along the horizontal axis or height and y is scale factor along the vertical axis or width**. If you want to get half size of the original size you can use $x/2$, $y/2$.

new_dimensions = (x/2, y/2)

You can also set the height and width using pixel size.

```
In [5]: for file_name in os.listdir(path):  
        print("Working on %s" % file_name)  
        image = Image.open(os.path.join(path, file_name))  
  
        new_dimensions = (224, 224)  
        output = image.resize(new_dimensions, Image.ANTIALIAS)  
  
        output_file_name = os.path.join(path, "new" + file_name)  
        output.save(output_file_name, "JPEG", quality = 50)  
  
        print("Complete!")
```

new_dimensions = (224, 224), Here first 224 is height and last 224 is width.

> Decrease Quality

```
output.save(output_file_name, "JPEG", quality = 50)
```

```
output.save(output_file_name, "JPEG", quality = 50)
```

You need to change the value of quality. Here we used 50. It will decrease half image size. If you don't want to change the quality, then keep it 100.

After set x,y and quality, run the cell.

If everything is ok, then you will see **Working on IMG_20200112_100323.jpg**.

```
print("Complete!")  
Working on IMG_20200112_100323.jpg  
Working on IMG_20200112_095809.jpg  
Working on IMG_20200112_095902.jpg
```

When all the images are processed, then you will see **Complete!**

```
Working on IMG_20200112_095902.jpg  
Complete!
```

In []:

Now, your images are ready for preprocessing and your computer now can load it easily.


GitHub link of notebook :


https://github.com/rashidulhasanhridoy/Preprocessing/blob/master/Resize_Shape_%26_Decrease_Quality_of_all_images_in_a_directory_using_Python.ipynb

End Note! Happy Learning. Take care.

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