

Python Automation Script to Watermark all images in a given folder

Aim

Adding a watermark to an image is a tedious and repetitive task and can take a large amount of time to be done in PhotoShop or any other relevant design utility, depending on the skill of the graphic designer and the number of images to watermark . This tedious task can be automated in python using OpenCV module, along with some other small utility modules such as glob and the os library. The aim of this project was to create a simple python script which would add a watermark/logo to all images stored in a given folder in a fraction of a second, irrespective of the number of images involved.

Algorithm

Step 1: import cv2,glob,os,numpy

Step 2: Read the logo/watermark image, store height and width of this image

Step 3: Store all the addresses of images that you need in a list

Step 4: Iterate over every image address in the list

Step 4.1: Read the image, store height and width of image

Step 4.2: Find the X and Y coordinate of the center of the image

Step 4.3: Find the 4 points of interest using the center of image and the height and width of the logo image

Step 4.4: Create a Region of interest using these points

Step 4.5: Do the weighted addition of the ROI of original image and the logo store as 'result'

Step 4.6: Replace the ROI of original image with that of result.

Step 4.7: Save this image on the user's storage device.



Fig. 1: The original image



Fig 2: Finding points of interests



Fig 3 : Final output

Testing

Testing was done on stock images of file formats of 3 types:

- 1) JPEG : Joint Photographic Expert Groups
- 2) PNG : Portable Network Graphics
- 3) GIF : Graphics Interchange Format

Results

While the program was able to watermark all images which were of JPEG format, it was unable to do so with PNG and GIF files. The program, when given an input of all 3 file formats, would dutifully watermark the JPEG files but could not do so with PNG or GIF files, and showed an error.

Conclusion

In conclusion, this script is capable of Watermarking all the JPEG images kept in a folder at one time in less than one second, but fails to do the same in other file formats.

References

- 1) <https://docs.python.org/3/library/glob.html>
- 2) https://docs.opencv.org/3.4/d5/dc4/tutorial_adding_images.html
- 3) "Graphics Interchange Format, Version 87a". W3C. 15 June 1987
- 4) "History of PNG". Libpng.org. 29 May 2010.
- 5) "Definition of 'JPEG'". Collins English Dictionary.