

OpenCV Continues

Note: By end of this lab make sure you have openCV installed on Ubuntu and you are able to execute the sample code provided.

1) `cvResize()` is a function in openCV for resizing images ie. Interpolation. Look up the usage of this function in the “OpenCV” ebook as suggested in the class today. Make this program to use command line argument as follows. “lena512.png” is the input image. Save the output in “lena1024.png”. Use `cvSaveImage()` to save to file.

```
./resize lena512.png lena1024.png
```

Morphological Operations

2) Implement erosion and dilation as matlab functions. Once the basic functions are made, try to generalize it for a “Structuring Element”. At the end create functions as follows

```
function [ out ] = my_erosion( im, str_element )
```

```
function [ out ] = my_dilation( im, str_element )
```

Apply these operations on the “binary image dataset” provided. Draw your conclusions.

3) Using the functions which are created in 2), implement opening and closing operations. Apply them on the “binary image dataset” provided. Draw your conclusions.

4) Implement “Top Hat”, “Black Hat” and “Morphological Gradient”. Apply them on the “binary image dataset” provided. Draw your conclusions.

Image Water Marking

5) Use “dip.png” as a watermark and use “lena” as input image. Watermark it with 2 simple techniques

- i) Using Image Negative
- ii) Addition of a constant.