UNIVERSITY OF RUHUNA

BACHELOR OF INFORMATION AND COMMUNICATION TECHNOLOGY

ICT4163 - Digital Image Processing

Practical 01 – Introduction to Digital Image Processing with Python

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- ***Note that: Download the relevant resources for this practical from the resources folder of the LMS.***

1. Import the "cv2" (open cv) library and the "cv2_imshow" patch to the google collab.
2. Read and display the given image (image_1.jpg).
3. Convert the given image (image_1.jpg) to a grayscale image and display.
4. Resize the given image (image_1.jpg) according to the following width and height of pixles.
   - Width 600 pixels
   - Height 400 pixels
5. Rotate the given image (image_1.jpg) by 180 degrees and display.
6. Blurring the given Image using "Gaussian Blur" according to the following kernel size and the standard deviation.
   - Kernel size 20,
   - Standard Deviation : let it to select automatically
7. Detect the edges of the given image (image_1.jpg) using Canny edge detector, the lower and upper threshold values are as follows.
   - Lower Threshold: 100
   - Upper Threshold: 200
8. Draw a rectangle on the given image (image_1.jpg) according to the following values and write your index number and the name inside that.

   The rectangle need to be started from the top-left corner of the given image according to the given coordinates (x=50, y=50).
   - Width: 450px
   - Height: 200px

9. Threshold the given image (image_1.jpg) using the following threshold value.
   - Threshold Value: 130
   - The maximum value that a pixel can take when it is above the threshold: 255