PRACTICAL - 6

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Aim: Point Processing in Image Processing using Python-OpenCV

Theory:

Thresholding is the process of forcing a certain or all the pixel values either to zero or to the maximum possible value. Various thresholding techniques are available to process images. Thresholding can be performed either with a grayscale image or a colour image.

Binary thresholding makes pixel values either to zero or 255 based on the threshold value provided. The pixel values below the threshold value are set to zero, and the pixel values above the threshold value are set to 255. We can recall that 0 refers to black and 255 refers to white in a grayscale image. Thus a grayscale image applied with binary thresholding will become a black-and-white-only image. On the other hand, a colour image applied with binary threshold values will only have black, blue, green, red or any combination of the latter three colours. For instance, combination B+G+R gives white colour, and R+G gives yellow colour.

Inverse binary thresholding is the inverted process of binary thresholding. The pixel values above the threshold are set to zero and the pixel values below the threshold are set to 255. The resulting image will become a black-and-white-only image if the input is a grayscale image.

In truncated thresholding, the pixel values below the threshold are left unaltered, and all other values are set to the threshold value.

Threshold-to-zero is the thresholding process of setting the pixel values below the threshold to zero while the pixel values above the threshold are left unaltered.

Threshold-to-zero-inverse is the thresholding process of setting the pixel values above the threshold to zero while the pixel values below the threshold are left unaltered.

Requirements:

- Open CV
- numpy

Output:

Original image

Negative Image

Image with threshold (150)

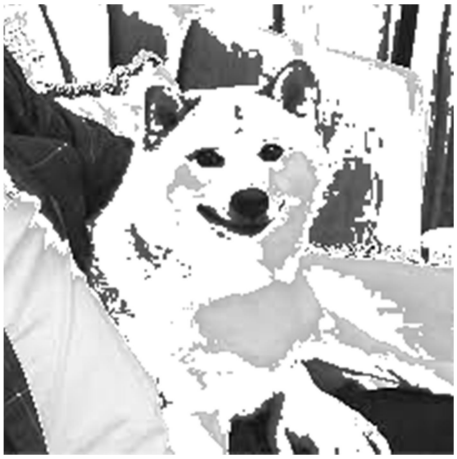

Image with threshold (180)

Conclusion:

In this practical we have learnt Point Processing in Image Processing using Python-OpenCV