

IIVP 2020 Lab 6

Dated: 22/09/2020

Time Allotted: 2 hrs

1. Given image A, and the filter

$$B = \begin{bmatrix} 2 & 1 & 9 \\ 7 & 18 & 6 \\ 0 & 1 & 87 \end{bmatrix}$$

Convolve the image with the filter B in such a way that the image size remains unchanged on all 3 separate channels of the RGB image. Finally, create the output RGB image by combining the 3 channels.

Note: No external functions are to be used for ANY of the operations except creating the final RGB image from the output matrix.

2. Consider the following image C. Generate another matrix G using the convolution operation over complete image matrix using the 5x5 Gaussian mask given D. Note that the final image size should remain same as the input image size.

Now perform the steps of high boost filtering and generate the filtered image I' and output it.

$$D = 1/8 \times \begin{bmatrix} 5 & 25 & 0 & 6 & 9 \\ 59 & 62 & 0 & 4 & 8 \\ 24 & 36 & 0 & 7 & 8 \\ 0 & 0 & 0 & 0 & 0 \\ 8 & 7 & 0 & 36 & 24 \\ 8 & 4 & 0 & 62 & 59 \\ 9 & 6 & 0 & 25 & 5 \end{bmatrix}$$

Note: No external functions are to be used for ANY of the operations.