Assignment 2 Question 1 Report

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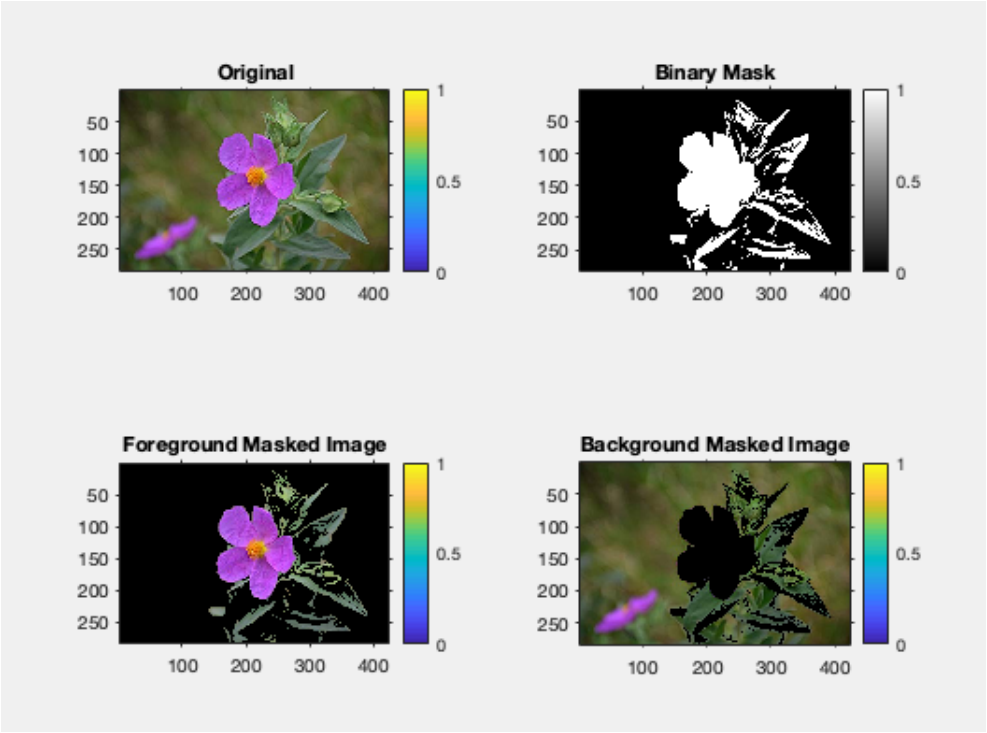
1 Flower

1.1 Approach

We first obtain a mask to get a foreground and background and then we blur-out the background using a spatially varying uniform circular-disk kernel .
Instead of performing convolutions on all three of the colors, we perform it only for the red and blue color so as to obtain much better result.

1.2 Results



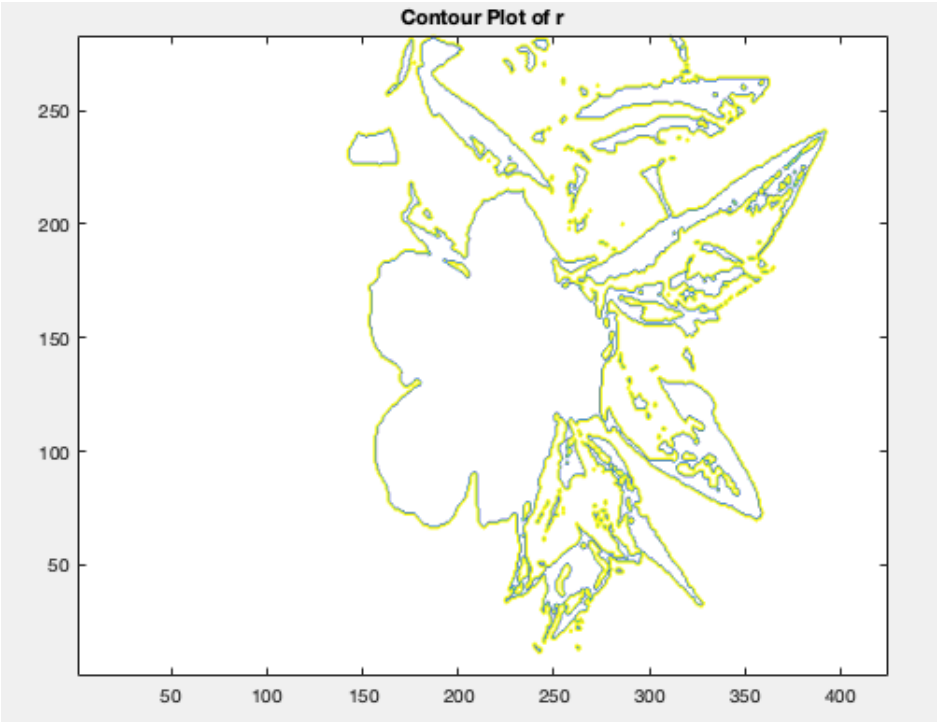


Figure 1: Contour plot

Figure 2: Final Image

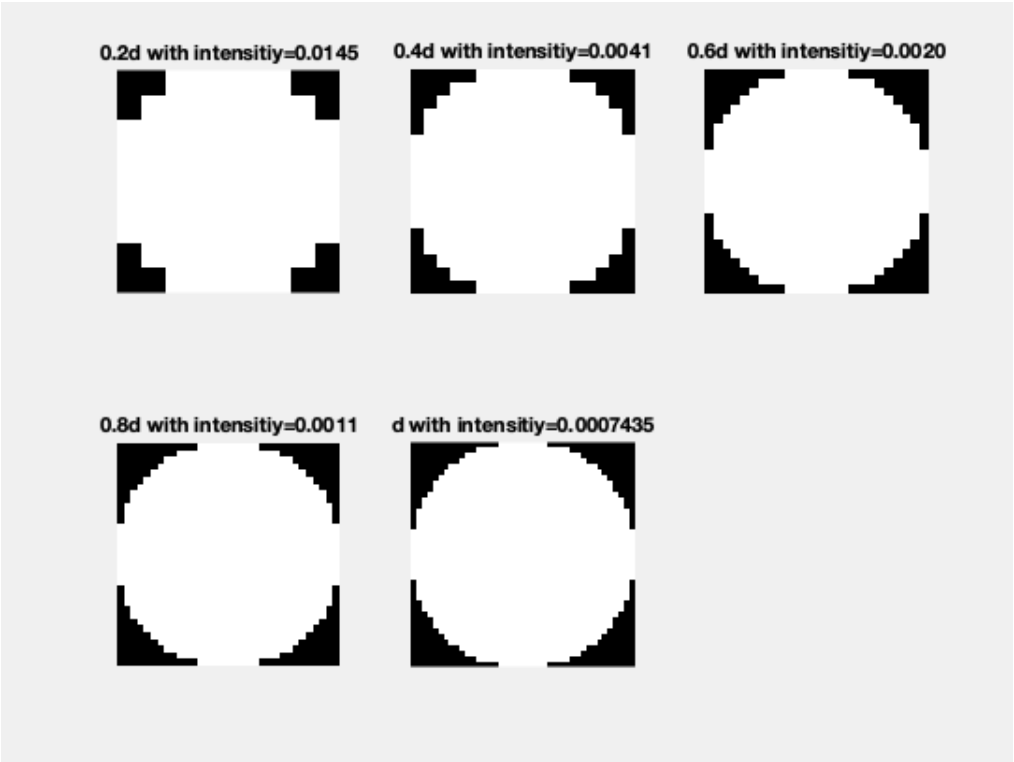


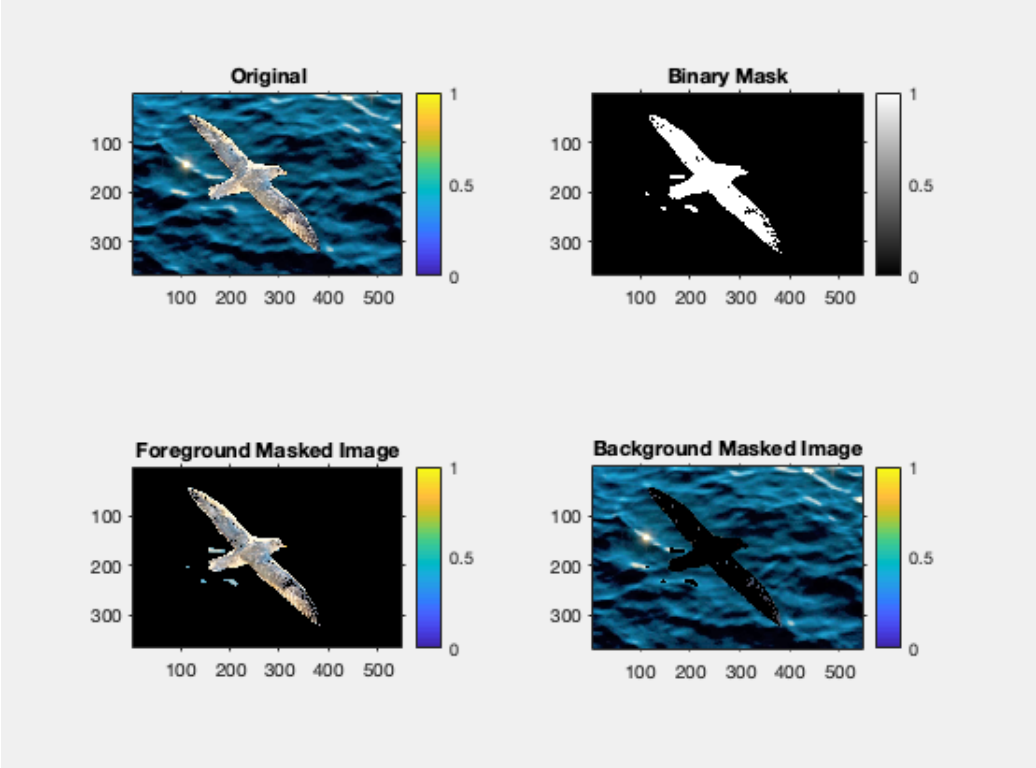
Figure 3: Kernels

2 Bird

2.1 Approach

Here we first downsize the image by a factor of 2 along each dimension and then obtain a mask to get a foreground and background and then we blur-out the background using a spatially varying uniform circular-disk kernel .
For this particular case we tried to do the convolution on selective colors but instead of blurring the background it enhanced it. When convolution was performed on the three color, we got an image as shown below.

2.2 Results



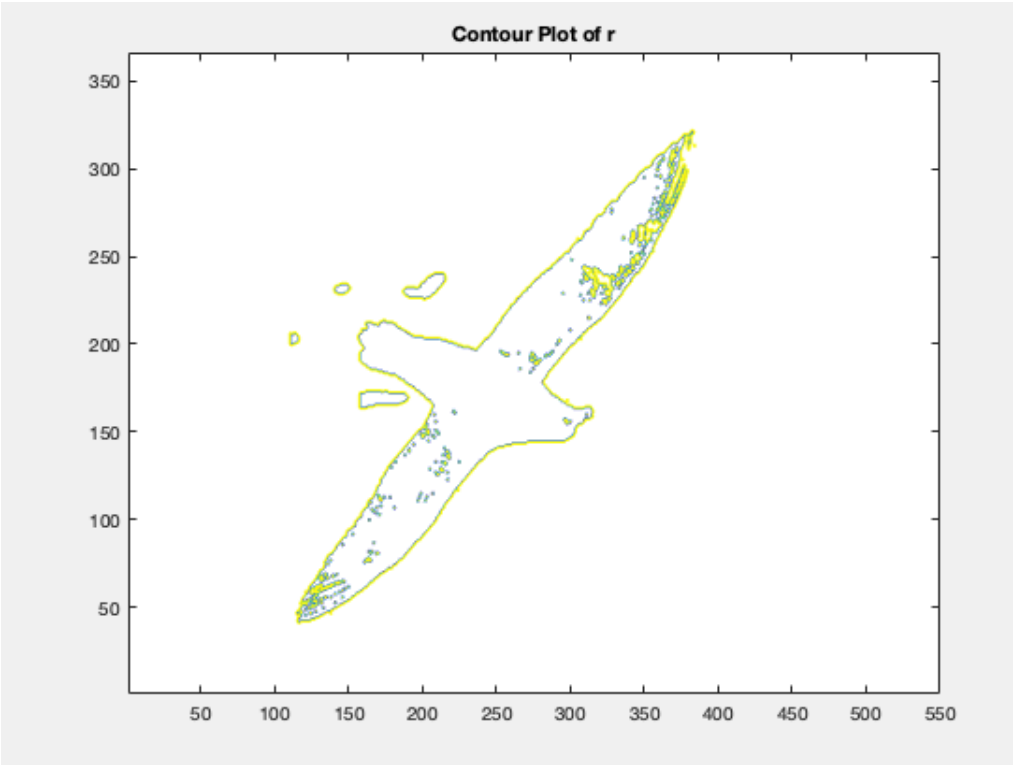


Figure 4: Gaussian Spatial Mask

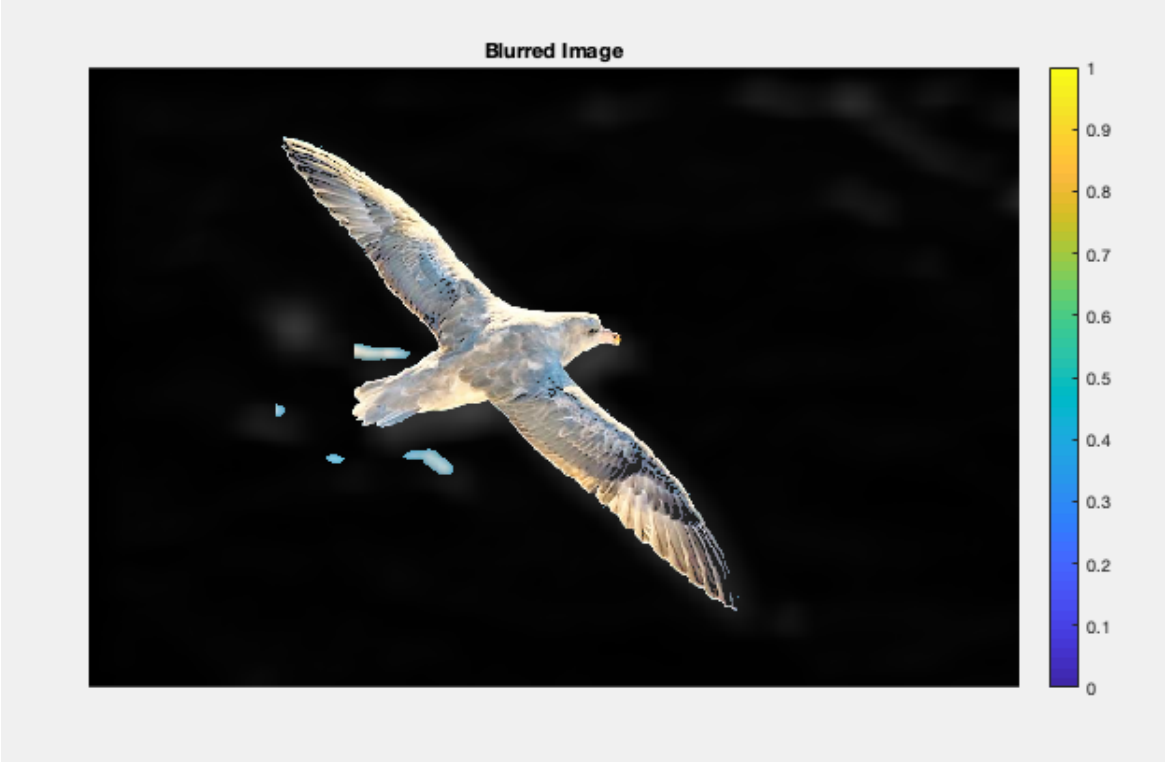


Figure 5: Gaussian Spatial Mask

3 Conclusions

Here we have performed spatial filtering on 2 images using circular kernels and observed the results. We see that the kernel circle becomes larger as we move away from the boundary and thus the intensity of each pixel reduces as shown in the figure above. Hence when we perform the convolution far away from the boundary of the mask we get a more blurred image.