

Lab 9 Summary

I couldn't use the convolution.cpp file due to some errors, but I used it with a few modifications (copy paste functions to OpenCVApplication.cpp and init Mats the way I did in the other labs)

Part one:

- implement convolution function
 - go through the kernel and check if high or low pass filter, in the same time computing the necessary sums
 - compute scaling and addition as explained in the lab doc
 - apply convolution going through each pixel of the image, considering the size of the kernel (start from k and end at size-k, where k is half the size of the kernel)
- create the filters and apply each of them on the source image

Part two:

- use the provided functions (centering_transform and generic_frequency_domain_filter) to convert the image to freq domain, then back to spatial domain (they are the same, but the converted image is slightly darker)
- display the logarithmic image (compute the logarithms of the magnitudes, normalize them and display the obtained Matrix to get a visual representation)
- implement filtering operations, using the provided formulas (applied on channels[]), on each pixel