

HOMEWORK 4

Content: sharpening

- Laplacian filter in spatial domain
- Laplacian filter in frequency domain

Step1. Get the Spectrum using Fourier Transform. (ex. `np.fft.fft2`)

Step2. Apply filter on Spectrum.

Step3. Convert the new Spectrum to spatial domain using inverse Fourier Transform.

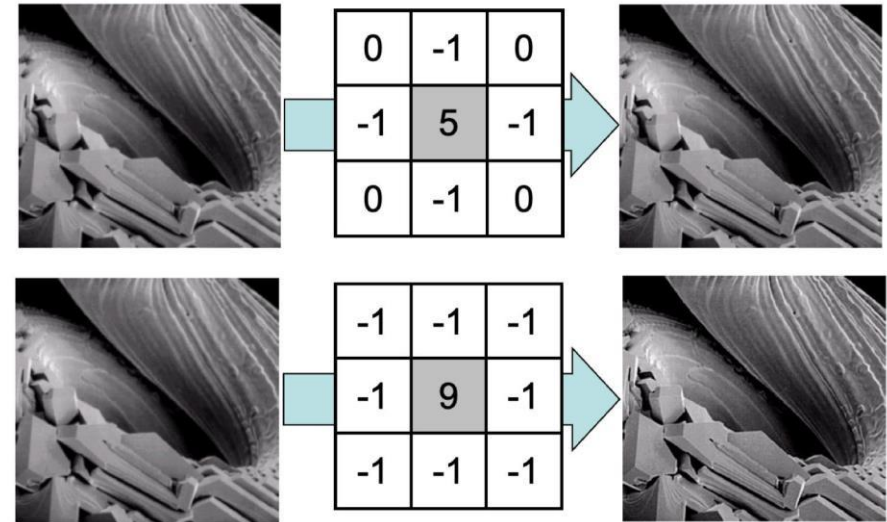
Implement Policy

- Find images by yourself
- Implement Laplacian by yourself
 - You can use different kernel size and type
- Implement convolution by yourself

Grading Policy

- Each domain: 45pts
- Report: 10pts
- Format penalty: **-10pts**

Example of Laplacian image sharpening



Submission

- Report (**STUDENT_ID.pdf**)
 1. Method
 2. Result: result images, comparison
 3. Feedback
- Code (**STUDENT_ID.zip**)
- Deadline: **5/9 Fri. 10:10**



```
graph LR; A[ ] --- B[109xxxxxx.pdf]; A --- C[109xxxxxx.zip];
```