

PROJECT-1

Project submission

Due data

: 4. 10(Tue) 12:00 PM

How to submit

: Use LMS board

Submission

- : Main report + source code (m or C/C++ file)
- : The report document should be converted to the pdf file
- : All source code files are zipped into one file
- : Your submission → report.pdf, code.zip

Penalty

- : Late submission
 - -5pt until 18:00 PM
 - -10pt until 24:00 PM
 - -20pt per day (5 days late submission → no points)
- : Plagiarism (e.g. copying someone else's report, source code, etc.) → No points

No exception

- : No exception for network, system problems
- : Email me if LMS system is not working (byungoh@kau.ac.kr)
- : Please check the uploaded files again by downloading and uncompressing

1. (Image denoising) Please implement the followings and analyze the results.

1) Generate the following noises, and add them to the ground-truth images.

- a) Impulse noise b) Gaussian noise c) Uniform noise

(Hint : Use uniform noise generation such as rand() function in MATLAB)

2) Implement the following denoising filters, and applied them for denoising.

- a) Gaussian filter b) Bilateral filter c) Median filter

3) Please compare and analyze the results with subjective and objective (PSNR) measurements.

2. (Edge detection) Please implement the followings and analyze the results.

- 1) Implement 1st order edge detector. (e.g., Sobel, Prewitt)
- 2) Implement 2nd order edge detector. (e.g., LoG)
- 3) Please compare and analyze the results.

Tip

1. DO NOT use the library functions. (filter, conv, imnoise, ...)

Simple basic functions are allowed to use. (e.g., sin, cos, rand, randn, min, max, median, ...)

→ It is highly recommended to use the library functions for comparisons.

2. Apply various options as much as possible. (e.g., varying noise energy, filter parameters, ...)