Digital Image Processing (2023)

Homework

{ Low-luminosity Enhancement + Sharpness Enhancement + Denoise}

Deadline: 112.11.06

Low-luminosity Enhancement (30%)

Using C++ or C, improve the luminosity of the given input image. You should output images with 2 different degrees of modification.

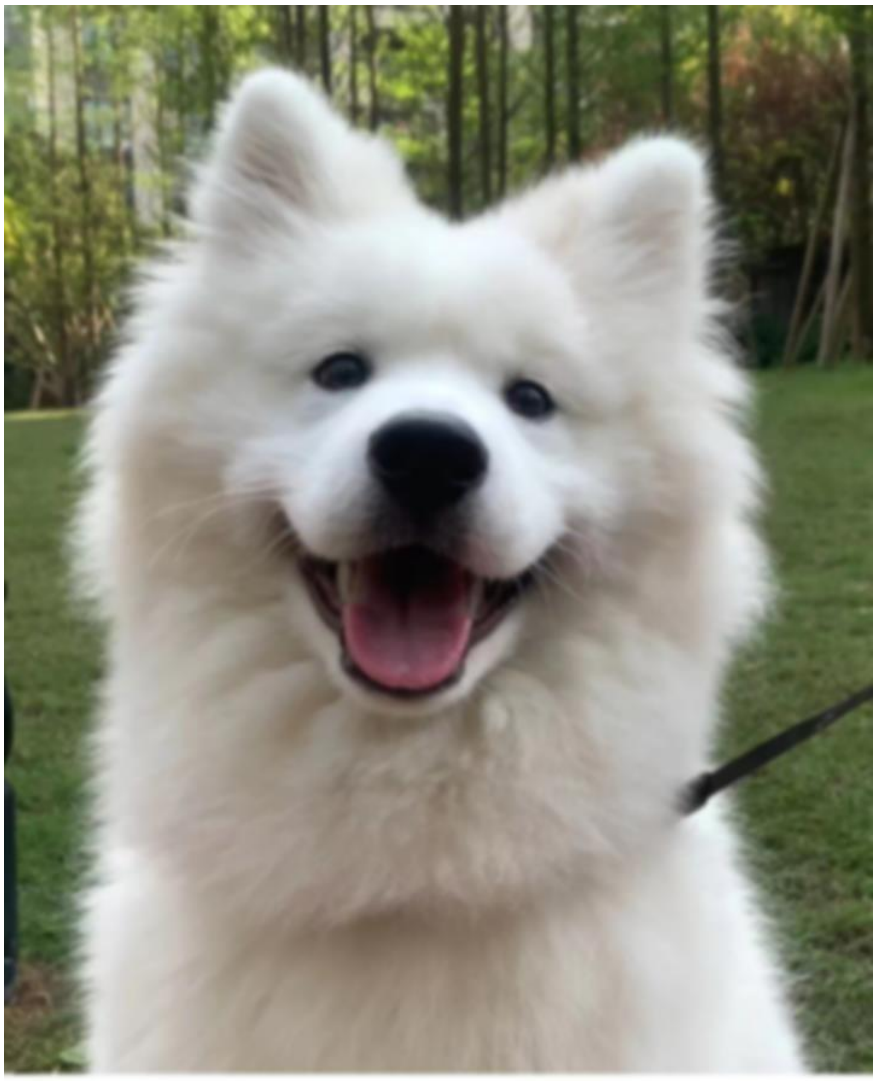
[Input] input1.bmp

[Output] output1_1.bmp

output1_2.bmp

Sharpness Enhancement (30%)

Using C++ or C, perform sharpness enhancement on the given image. You should output images with 2 different degrees of modification.



[Input] input2.bmp

[Output] output2_1.bmp

output2_2.bmp

Denoise (40%)

Using C++ or C, remove the noise in the given input image. You should output images with 2 different degrees of modification.

[Input] input3.bmp

[Output] output3_1.bmp

output3_2.bmp

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Homework Rules and Grading Policy

Homework will be graded by:

1. Correctness (70%)
2. Report (30%)
   - Explain your algorithm and do some discussion in at most 4 pages. (A4)
   - Different degrees of modification have to be differentiable.
   - You should provide comparison between distinct levels of modifications for each type of enhancement.

Upload:

[web] E3

[File Name] hw2_StudentID.zip (ex: hw2_123456789.zip)

- report in the format of .pdf.
- three C, C++ codes with comments.
- ReadMe.txt file which describes how to run your program.
- all output images.

Remind:

Deadline

If you have a late submission by 1 to 7 days, you will only get 70% of the score.

We DO NOT accept any late submission after 7 days after the deadline.

Notice:

Cannot use the toolbox, except for FFT.