

Image Processing – HW1 (03/14/2019)

Instructions – Follow these carefully:

1. Please email your work as a zip file attachment to ytpeng@cs.nccu.edu.tw. In the zip file, it must have the source code and a PDF report where you explain and display the outputs for each problem.
2. You can use either Python or Matlab to do the work.
3. Please feel free to read related materials available in the official Matlab/Python documentation.
4. The due date is 4/3 before 1:00pm. No late submission is allowed.

Assignment:

1. Create a program that combines two perfectly aligned pictures (laptop_left.png and laptop_right.png). The output should be:



2. Implement a program to flip the image lena_flipped.jpg
3. After flipping the image from Problem 2, please transform it from the RGB to YCbCr color space. Subsample Cb and Cr components based on the 4:2:0 YCbCr format, and then transform it back to the RGB color space. Display all the results (including intermediate ones, such as Y, Cb, and Cr images) and compare the original image with the subsampled version of the image in the RGB color space.