School of Computing
National University of Singapore
CS4243 Computer Vision and Pattern Recognition
Semester 1, AY 2014/15

Assignment 1

Objective:

To understand the materials covered in the lectures through

- Writing the code to do histogram equalization using python codes

Preparation:

- Read slide#6 to slide#20 of lecture note CS4243_L03_ImageEnhancement.pdf to revise histogram equalization.
- Download the file assignment1Pictures.zip from IVLE into your working directory. Uncompress the file and you should find the following pictures: `airborne.jpg and haze.jpg.`

Histogram Equalization

This is an exercise to make sure you understand histogram equalization. You must write a python code for doing histogram equalization on a grayscale image. Specific instructions are:

- You can only use OpenCV for the following, and only for the following:
  - read an image using cv2.imread
  - write an image using cv2.imwrite
- You are not allowed to use any other methods in OpenCV or any other packages other than python and its following imports:
  - numpy
  - matplotlib
- You must implement histogram equalization by writing the python codes by yourself (i.e. you cannot get the codes from elsewhere).
- You need to run your codes to do histogram equalization on airborne.jpg and haze.jpg.

Submission Instruction

Submit the following by the Monday evening lecture on 29th Sep 2014:

1. Print-out of your Python codes.
2. Print-out of the histogram equalization results.
   - Note that you should print the before (i.e. original) and after equalization images on the **same** page for ease of comparison.
3. Submit the softcopy of your Python codes to IVLE.
   - Please put your python codes in a folder and submit the folder. Use the following convention to name your folder: MatriculationNumber_yourName_Assignment#. For example, if your matriculation number is A1234567B, and your name is Chow Yuen Fatt, for this lab, your file name should be A1234567B_ChowYuenFatt_Assignment1.

Please remember to write your name on the hardcopy print-outs.