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

Assignment 2

Objective:

To understand the materials covered in the lectures through

- Writing the code to do good feature detection using python codes

Preparation:

- Read slide #12 to slide#14 of lecture CS4243_L05_ChangeDetectionTracking.pdf to revise corner detection (i.e. good feature detection).
- Download the file assignment2Picture.zip from IVLE into your working directory. Uncompress the file and you should find the following picture: `labPhoto.jpg`.

Part 1. Good Feature Detector

This is an exercise to make sure you understand how to do good feature detection. The technique used should be the one covered in the lecture.
You must write a python code for doing good feature detection on a grayscale image (you will be given its color version). 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 the other methods in OpenCV and any other packages other than python and its following import:
  - numpy
- You must implement a good feature detector by writing the python codes by yourself (i.e. you cannot get the codes from elsewhere).
- You need to run your codes to do good feature detection on labPhoto.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 good feature detector results
   - Note that you just need to print the image with the good features marked by graphics overlay (use a rectangular box of the same size as your feature window to mark the good feature)

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_Assignment2.

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