ECE332 Introduction to Computer Vision, MP#3

This MP is quite simple. The due date is 10/15/2019 (Tu) .

1   Histogram Equalization

The purpose of this MP is to let you to have a clear understanding and a clean implementation of some basic histogram techniques. You are required to implement a histogram equalization algorithm. If you are using Matlab, you can use the following prototypes.

```
function img_out = HistoEqualization(img_in);
```

where `img_in` and `img_out` are input and output images.

A test image is `moon.bmp`[1]. You can also create your own test images. Please pay attention that this image is an 24-bit bitmap. You need to convert it to gray level image before processing. In Matlab, you can use

```
img_in = rgb2gray(imread('moon.bmp','bmp'));
```
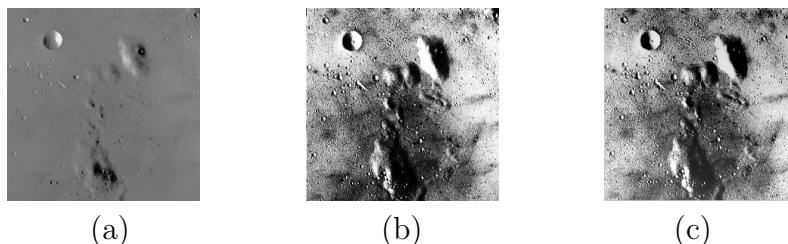

(a)   (b)   (c)

Figure 1: (a) the original `moon.bmp`. You need to run your code on this image. To give you a reference, b) and (c) are some results. (b) after histogram equalization, (c) after lighting correction.

2   Lighting Correction (optional)

Lighting correction is an interesting topic. You can implement the lighting correction algorithms discussed in class, and apply them to the histogram equalized images. You can implement both the linear method and the quadratic method.

3   What to turn in

Each individual student should turn in his/her own solution. What you need to turn in includes:

- your code;
- a short report (≤ 1 page is fine);
- your results on these testing images.

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[1]you can download these images from our course website