

## UTS – Pengolahan Citra Digital

### Project 1

#### Image Enhancement Using Intensity Transformations

The focus of this project is to experiment with intensity transformations to enhance an image.

Download Fig. 3.8(a) and enhance it using

- a. The log transformation of Eq. (3.2-2).
- b. A power-law transformation of the form shown in Eq. (3.2-3).

In (a) the only free parameter is  $c$ , but in (b) there are two parameters,  $c$  and  $r$  for which values have to be selected.

As in most enhancement tasks, experimentation is a must. The objective of this project is to obtain the best visual enhancement possible with the methods in (a) and (b). Once (according to your judgment) you have the best visual result for each transformation, explain the reasons for the major differences between them

### Project 2

#### Histogram Equalization

- a. Write a computer program for computing the histogram of an image.
- b. Implement the histogram equalization technique discussed in Section 3.3.1.
- c. Download Fig. 3.8(a) and perform histogram equalization on it.

As a minimum, your report should include the original image, a plot of its histogram, a plot of the histogram-equalization transformation function, the enhanced image, and a plot of its histogram. Use this information to explain why the resulting image was enhanced as it was.