Homework #3 (120% in total)

Given: 08 Dec. 2016; Due at 09:10AM 19 (Monday) Dec. 2016

1. Elaborate on how image histogram can be applied to photogrammetry-related tasks? (30%)

2. Assume that the image is of continuous function. Entropies of single image (I) and pair image (I,J) are defined as follows:

$$H_{\mathrm{I}} = -\int_0^1 p_I(i) \log\, p_I(i) di$$

$$H_{I,J} = -\int_0^1 \int_0^1 p_{I,J}(i,j) \log\, p_{I,J}(i,j) didj$$

Analyze the meaning of $H_{\mathrm{I,J}}$ and how it can be used to measure the similarity of conjugate image content? (30%)

3. What is "Convolution Theorem"? Design your own experiment to demonstrate the deconvolution by using Convolution Theorem. (60%)