Systems and Biomedical Engineering Department

Faculty of Engineering
Cairo University

Medical Image Processing & Computer Vision
Spring 2023

Assignment#7 Noise

Noise

Requirements:

Using the GUI you created in assignment 1, you are required to:

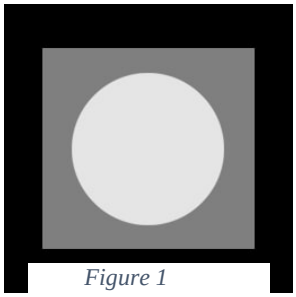

Figure 1

1. CREATE a 256x256 image similar to Fig. 1:
   a. With the following intensities: 50, 150, 250
2. Display the image
3. Add noise to the image:
   a. Gaussian noise with $\sigma = 5$ and mean = 0
   b. Uniform noise with $a = -10$ and $b = +10$
4. Display noisy image
5. USER draws a rectangular ROI (Region of Interest) on the image
6. Calculate and display the ROI's histogram
7. Calculate and display the ROI's mean and σ from the histogram

Submission

Submit working code files through Blackboard.

- This is an individual based assignment.
- The due date for submission on Blackboard is Wednesday, 16/12/2022
- No need to upload the GUI

General instructions

- You are allowed to use built-in functions for noise generation
- Handle any errors or exceptions that might occur (e.g., corrupted image)
- You are allowed to use MATLAB (App Designer) or Python (PyQt)
- Your code should be clear, understandable, and documented (COMMENTS)
- Follow a consistent naming convention for variables and functions
- The assignment will be graded out of 5