Statistical Inference
(EECE5612)
Spring 2022
Midterm Exam, Part II

Due 3/9/2022 at noon.

Take-home rules: You may use textbooks, your notes and homeworks, but you must work alone. Any issues related to possible joint work will be addressed subsequently one-on-one.

Reporting: Your report must be submitted via Canvas as a single pdf file (FirstnameLastname.pdf). The file must include a typed report (not to exceed a single page, including figures) and computer code that was used (no page limit). Your name must appear on top. Reports that are late or exceed the page limit will not be considered.

Problem statement: The file `mdt22.mat` contains a noisy version of an original black-and-white image. Your task is to reconstruct the image.

Note:

- To display the image, load the file into Matlab and use `imshow(y)`.
- The image contains 1000×1000 pixels. The value of each pixel (gray) ranges from 0 (black) to 255 (white).
- Since you know that the original is strictly black-and white, your reconstructed image will consist only of pixel values 0 and 255.

Your report should contain the reconstructed image and a description of the approach you took for reconstruction. You must write your own Matlab code without using any built-in functions for image processing.