Assignment 4 – Due at noon February 15ᵗʰ

Objective:
To practice the texture description, clustering, and classification techniques taught in the past several lectures.

Problem:
- To segment the chambers from the given ultrasound image
- To segment the cardiac walls from the given ultrasound image

The image without texture labels can be downloaded from LMS.

Tasks:
1. Apply co-occurrence matrix for texture description
2. Apply k-means clustering using your own defined features
3. Apply SVM classification by marking your own training sample areas
4. Similar to 3, but use Random Forest

Requirements:
1. Submit a report in PDF format
2. Include all the results for the above tasks (*5 pts*)
   a. Reasonable visualization of your results (*2 pts*)
   b. Quality of your segmentation results (*3 pts*)
3. Analyze your results (*5 pts*)
   a. Justification of your choice of features (*3 pts*)
   b. Discussion of pros and cons of the applied methods (*2 pts*)