Assignment #2

Due September 12, Thursday, 1:00 pm

1. (50%) Write a simple algorithm in MATLAB to convert a binary image to a curve in polar coordinates: a) crop at least 2 figures from the given image in the folder as input; b) display the input and output results; c) discuss how to process the multiple value on the radial line; d) convert back from the polar coordinates to the polygon (or binary image) and plot the polygon.

(50%) Plot the following diabetes patient's 5-day log data with Chernoff Faces.
a) List the mapping table;
b) plot the 5 day faces.

Day	Pre_Break.	Pre_Bed	Overall	OVOF	OTBG
1	110	125	117	135.0277	117.5
2	100	120	110	135.0277	110
3	130	110	120	135.0277	120
4	140	135	137	135.0277	137.5
5	125	130	127	135.0277	127.5

Hint: Download MATLAB open source for Chernoff Faces and assign attributes to facial features.
http://www.mathworks.com/products/demos/shipping/stats/mvplotdemo.html?product

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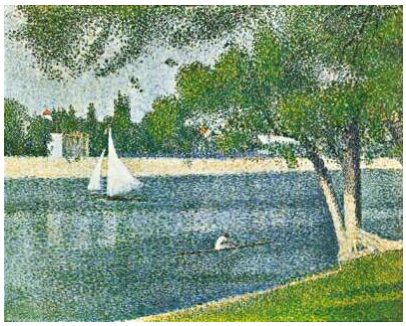
Also, there is an especific function in Matlab that you can call and modify all the parmethers (as eyes, mouth, nouse, ...) ...just write on Matlab : help glyphplot --> there is all the information there (code, parameters, examples ...)

2. (Bonus 25%) Imagine you are building a robot that appreciates fine art. You would like to teach the robot to learn different styles from Impressionist masters, such as Vincent Van Gogh and Georges Seurat. Download their representational painting images. Crop some patch samples. Use texture analysis models to distinguish the two masters. Build a demo if you feel confident for testing your model. [Hint: you may use 3D plotting or Nearest Neighbor model.]



Hint: Modify the MATLAB code sample on BB.