CICS-431 Computer Vision HW-NN See Dropbox for due date.

Segmentation Using Mahalanobis Distance

1. The usual rubric applies. Comments are important. You will be provided with code that has minimal comments. You should add to those comments to show understanding.

2. For easy grading, write one driver function that runs your entire homework.
   a. The function is to be in a file named HWNN_Lastname1_Lastname2_MAIN.m
   b. This function takes no parameters, but runs two subroutines:
      i. HWNN_part1('Img_of_oranges.jpg');

3. Part one:
   HWNN_part1(filename) reads in one image.
   Based on a model that you have written for classifying pixels as oranges (based on the color and other features), this classifies the pixels in the image as Orange (1) or not-orange (0).

   You will develop this classifier by collecting pixels on raspberries from the provided images.
   The test images will be very similar.

   Your program may change the color space of the image to any other color space it wants to use.
   It then uses a pre-built classifier to determine which pixels are raspberry pixels, and returns 1 if the pixel is a raspberry and it returns a 0 if the pixel is not.

   The returned image type is a uint8 image.

   Display the results in an image, with orange pixels white, and non-orange pixels black.

   Caution, some of the pixels in the input image may be orange colored, or yellow colored, but not belong to an orange. Use additional features to improve the accuracy of your classifier.

4. Please do a nice write up about how you solved each of these problems.
   Summarize your approach.
   Give good pseudo code.

   Describe any problems you ran into, and give good evidence of learning.

5. Write a conclusion about what you learned.