

Name: _____

CSE 634

Computer Vision for HCI

AU'11

Homework Assignment #3

Due: Tuesday 10/18

- 1) Use the `regionprops` function on `boxIm1.bmp` (provided on the class website) to compute its 'Area', 'Centroid', and 'BoundingBox'. Plot the centroid and bounding box on the image. [2 pts]

- 2) Write a function to compute the seven similitude moment shape descriptors. Test and compare results on the rectangle box images 'boxIm[1-4].bmp' on the website. How do they change across the box images? [3 pts]

```
Nvals = similitudeMoments(boxIm1);
```

- 3) Generate a 4-level Gaussian pyramid (original image is level-1) and the corresponding Laplacian pyramid of an image. Use the formula in the reading to determine a viable image size, and create an image (e.g., crop) to test the pyramid code. Use $a=0.4$ for the Gaussian mask – use separable masks. [7 pts]

- 4) Turn in all code, test image (from part 3), printouts of images, and discussion of results. Make a `HW3.m` script to do the above tasks and call needed functions. [2 pts]

Make sure to email your code (and selected image) to the grader.