Digital Image Processing
UPEC - Optics, Image, Vision and Multimedia

Analysis

1.1 Before the analysis step, it is sometimes necessary to remove some objects where numerical values could be wrong. For example, *skimage.segmentation.clear_border* permits to remove the disrupting objects that are in the border of the image. Using 'chro', how many objects are concerned?

1.2. Using 'coins', the aim is to count the number of coins for each class with these specifications:

        Class 1: surface between 1500 and 2000 pixels,

        Class 2: surface between 2300 and 2800 pixels,

No hole inside the objects.

        1.2.1. Use STATS = regionprops(L, 'Area') to obtain the surface of each connected component.

        1.2.2. Convert these data into an array using TAB=[STATS.Area].

        1.2.3. With plot(TAB,'Linestyle','none','Marker','*'), could we visually conclude that two classes exist?

        1.2.4. What about find(TAB >= 1500 & TAB <= 2000)?

        1.2.5. And size(find(TAB >= 1500 & TAB <= 2000),2)?

        1.2.6. Try to automatically compute the number of elements of each class.

        1.2.7. Assuming that these objects are circular, we try to approximate their radius, using both Perimeter and Area signatures.

            1.2.7.1. How to compute these data using one regionprops command?

            1.2.7.2. Try to approximate the radius of each coin using classical functions for a disk: Perimeter = f(R) and Area = g(R)?