22437 - Industrial Vision
Lab 9: Image processing and feature extraction

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Useful functions: *regionprops*, *imfilter*, *bwlabel*, *imfill*

This practice consists of using the processing tools views in class to obtain, from the images provided, binary images in which the main object. Subsequently, a series of descriptors that characterize existing objects.

Descriptors

Perform the following tasks for each given image (*apple.jpg*, *bell.jpg*, *shoe.jpg*, *fork.jpg*):

- Load the image and show it.

- Convert the image to grayscale and calculate its histogram. Show at the same figure the calculated image and his histogram.

- Obtain a binary image and show it at new figure.

- Use segmentation techniques learned in class (mainly morphological operations and edge detection operators) considered appropriate to isolate the significant object as best as possible of the image, without losing the main information from their original form.

- From the segmented binary image, obtain the following set of descriptors:

    - Area
    - Centroid
    - Orientation
    - Eccentricity
    - Solidity

Once all the images have been processed and the descriptors obtained corresponding to each object, two descriptors must be chosen from among all those calculated, to visualize the objects on the plane; so that if these descriptors are well chosen, the objects will be easily distinguishable.