Computer Vision

EMARO- *European Master on Advanced Robotics*
Robotics Engineering *Master Degree*

Lab Session n. 3

Edge detection

The following items are the steps that you have to do in this lab session:

- Write a MATLAB function that implements the Laplacian of Gaussian Operator:
  - sample and display the Laplacian of Gaussian with different spatial support and standard deviation.

- Convolve the test images with the Laplacian of Gaussian and display the results.

- Detect zerocrossings and apply a threshold on the slope of the zerocrossings:
  - scan along each row, record an edge point at the location of the zerocrossing;
  - then, do the same for each column.

- Test the algorithm with the provided images by varying the spatial support of the kernel and the threshold.

- Compare your results with the ones obtained by using the MATLAB function edge('log',…).

Notes:

- You have to write a report that describes your work and the obtained results (please include the figures). In the report you must indicate all the surnames of the participants (not other names, e.g. the teachers).
- About the code:
  - You have to use relative paths.
  - You have to write and use functions
  - You have to provide us a script to test your code.
- The code must be uploaded as M-files. All the files (M-files, images, and report) have to be compressed in a single file named "surname_labxx.zip/tgz/rar" (all the surnames of the participants have to be indicated), and then the compressed file has to be uploaded.