

Assignment 2

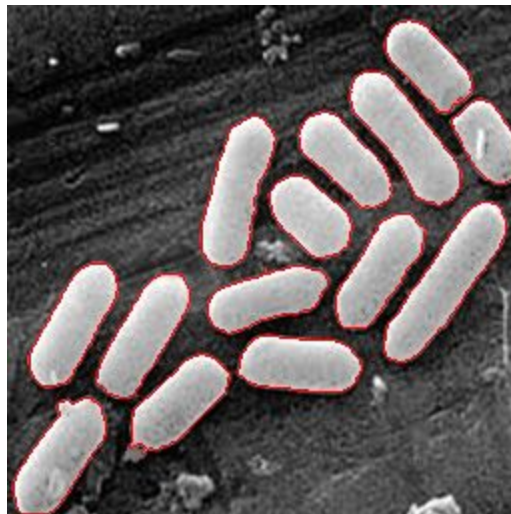
Boundaries extraction

Due date: March 15th, 2017

Implement a simple C++ program using the OpenCV library that:

1. Loads the image named "bacteria.png"
2. Thresholds the image using the Otsu global thresholding method
3. Extracts all the white regions boundaries using the Moore's algorithm
4. For each closed boundary with a length (perimeter) between 100 and 200 pixels, prints the boundary length to the standard output and draws the contour in red to a copy of the loaded image
5. Saves the produced image as "boundaries.png"

An example of the produced boundaries.png image is the following:



Notes:

There are no particular constraints on the number of function/classes/cpp files produced as long as no additional libraries are used except for OpenCV.

Comment your code whenever possible. Since no additional report is required, source comments are a good way to clarify what your code is supposed to do. Small bugs may not hinder your assignment as long as I can understand what is going on.

A clean organization of the program code is considered a plus and promotes the recycling of code for your final assignment.

Additional requisites:

The following OpenCV functions cannot be used:

- `cv::calcHist`
- `cv::threshold`
- `cv::adaptiveThreshold`
- `cv::findContours`

How to submit

Make sure that your program compiles and works on a system with Ubuntu 16.04 Xenial or newer (use lab computers as reference). Then:

1. Remove both the `dist` and `build` subdirectories. You must not submit any executable or object files.
2. Add a `README` file if appropriate (example you want to clarify some of the choices you made in the assignment or some additional features you implemented). It is also a good idea to write your name and surname in the `README`
3. Compress the whole project directory to a `zip` or `tar.gz` file
4. Name the project package you submit as: `<name>_<surname>_assignment2.zip`
5. Submit via moodle

Please remember that the assignment has to be done individually. You are not allowed to group into teams and submit the same source code for more than one person.

For any question feel free to mail me at filippo.bergamasco@unive.it.

Filippo Bergamasco
Computer Vision 2016/2017