Report Lab expierience 2
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Experience Gained

In this lab I understand how to :

- Convert an image from one color-scale to another and how to save it tanks to the functions **cv::cvtColor()** and **cv::imwrite()**
- Implement a Max and Min filter by myself and understand what is the impact if I apply those on a Image
- How to use median and gaussian filters in openCv thanks to **cv::GaussianBlur** and **cv::medianBlur** functions
- How to plot an histogram of an image with the use of the function **cv::calcHist()** and all the things related to it to plot the actual histogram
- How to normalize an Histogram by using the **cv::equalizeHist** function
- How CMakeList files works, because it is the first time that I use them due to the fact that on my machine I am using Visual Studio and all such stuff is automatized.

Unexpected Issues

The main difficulties of this Lab were :

- How to actual implement the min/max filters. This was solved by simply trying to work on a simple example.
- How to plot an actual histogram as we are used to see it. This is related to the fact that on the guide of openCv in the example the histogram is not plotted as a buch of rectangles one for each value of the x axis but as the connection of the values assumed for each x value on the y axis. This was solved by understanding what I need to provide to the **line()** function as shown in the file "task5.cpp"

Results

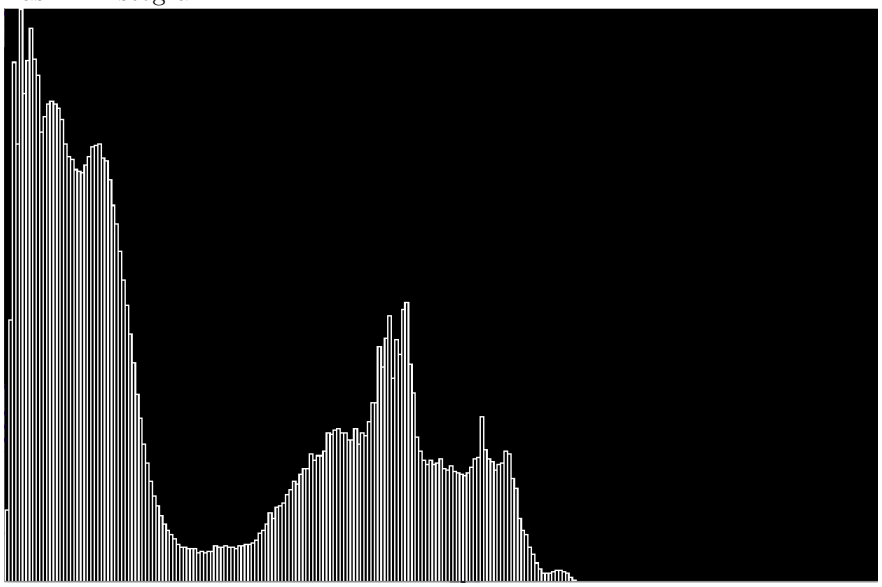
In this section we talk about the experimental results :

- Task1 : No things worthy to say
- Task2 : To remove the wires we need to apply a max-filter of 5x5 to not compromise to much the image the result is the following :

- Task3:
  Gaussian Filter :

Median Filter :

- Task4: Histogram :



- Task5 :
  Image After histogram Equalization :

  Histogram Equalized :