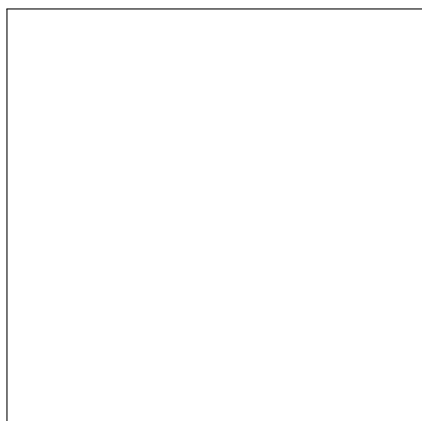
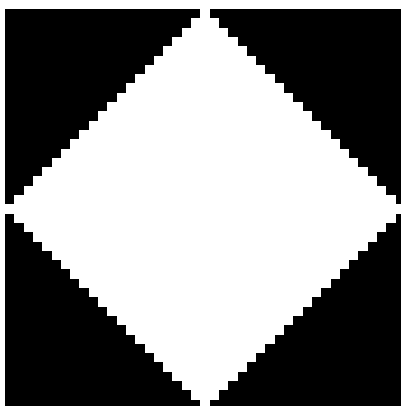


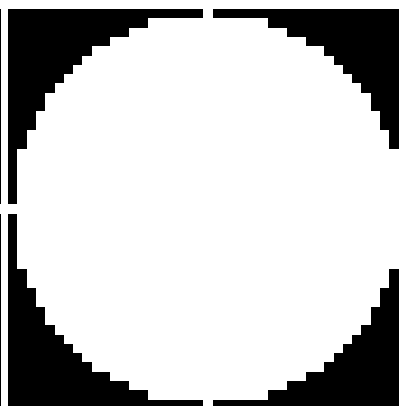
make-se <shape> <halfsize> <se-name>



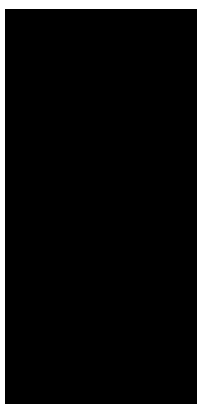
make-se 0 21 square.png



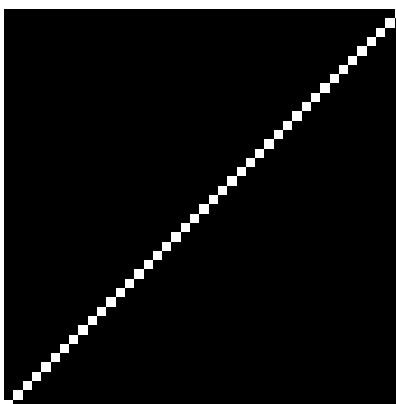
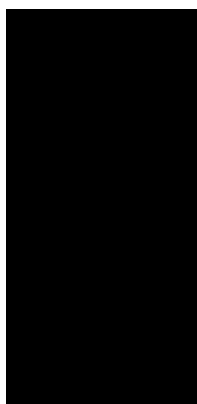
make-se 1 21 diamond.png



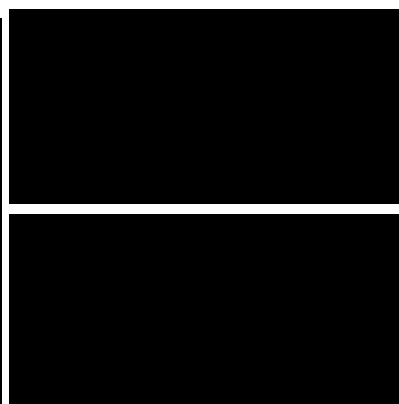
make-se 2 21 disk.png



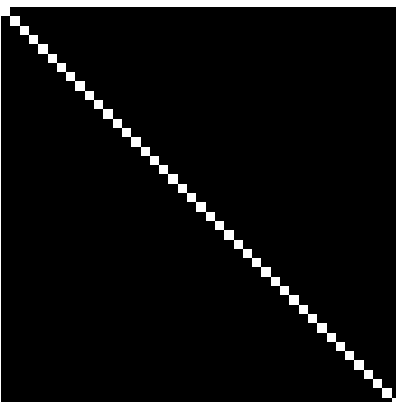
make-se 3 21 line_v.png



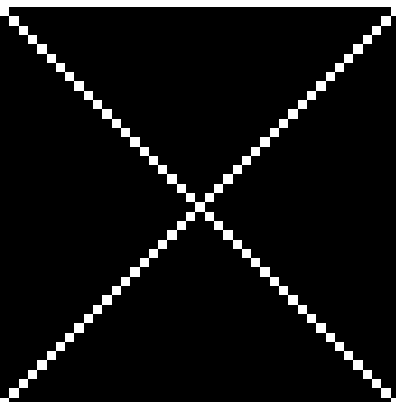
make-se 4 21 diag_r.png



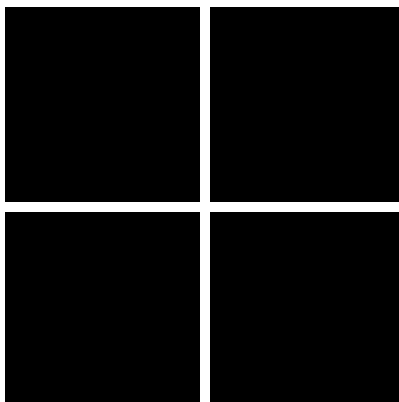
make-se 5 21 line_h.png



make-se 6 21 diag_l.png

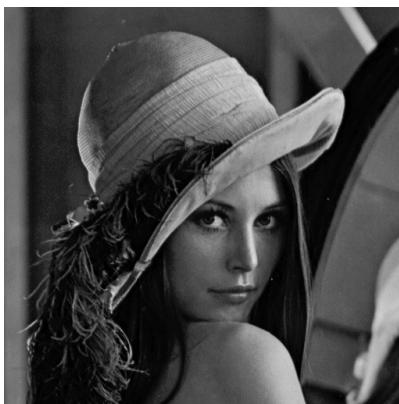


make-se 7 21 cross.png



make-se 8 21 plus.png

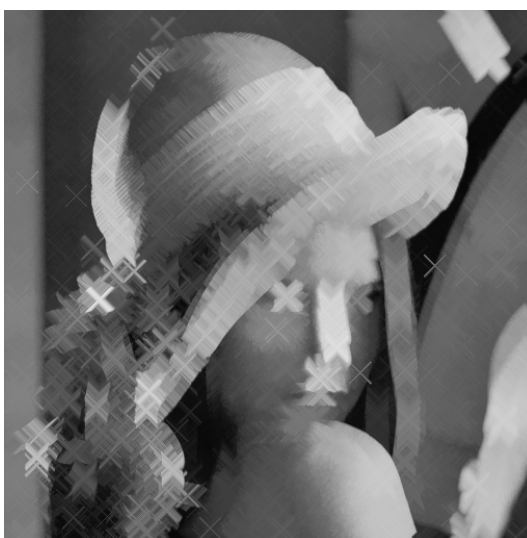
dilation / erosion <se-name> <ims-name> <imd-name>



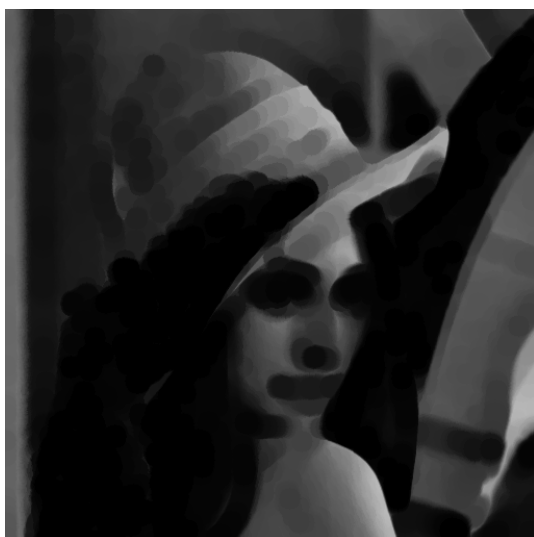
lena_gray.png



dilation disk-10.png lena_gray.png a.png



dilation cross-10.png lena_gray.png a.png



erosion disk-10.png lena_gray.png a.png



erosion cross-10.png lena_gray.png a.png

opening /closing <se-name> <ims-name> <imd-name>



lena_gray.png



opening disk-10.png lena_gray.png a.png



opening cross-10.png lena_gray.png a.png



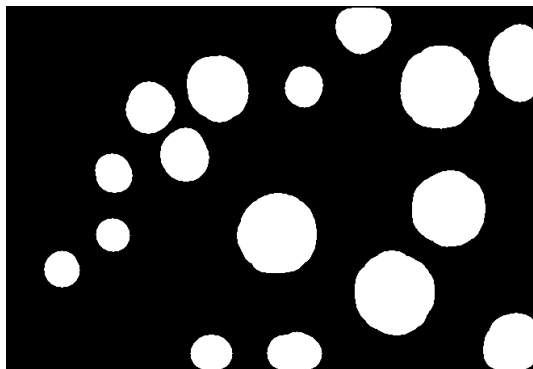
closing disk-10.png lena_gray.png a.png



closing cross-10.png lena_gray.png a.png

```
labeling-color <ims-name> <reg-name> <color-name>
```

```
labeling-color cell-bin.png cell-r.png cell-c.png
```



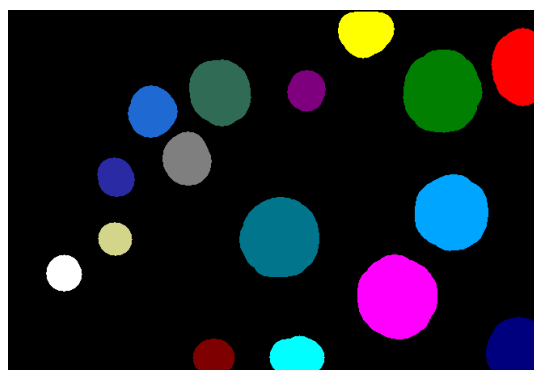
cell-bin.png



cell-r.png

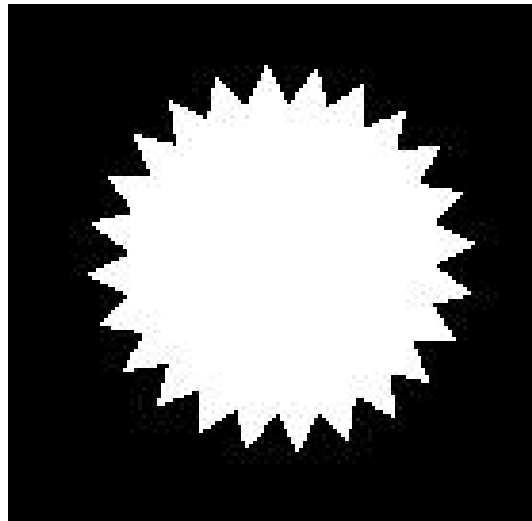


cell-r.png, histogramme équilibré

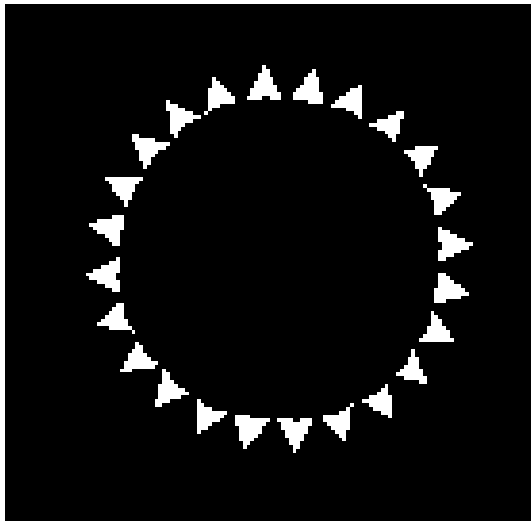


cell-c.png

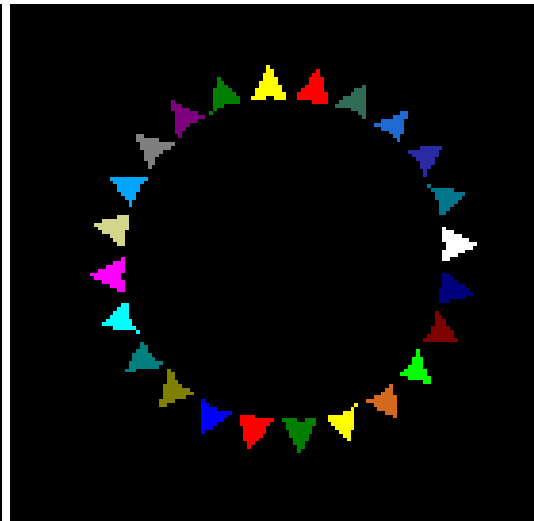
extract-gear.sh



gear.png

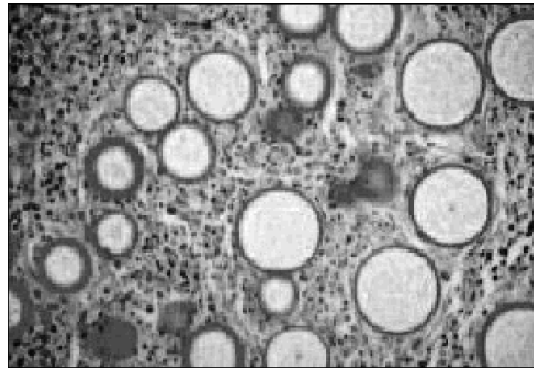


gear-res.png

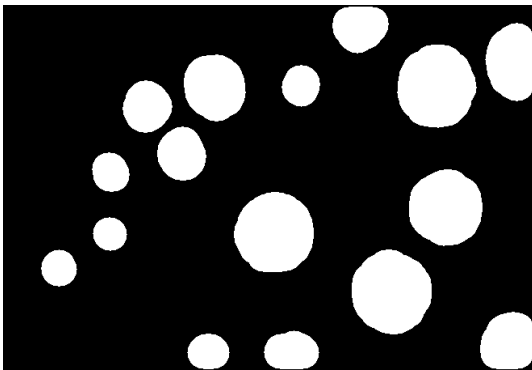


gear-res-color.png

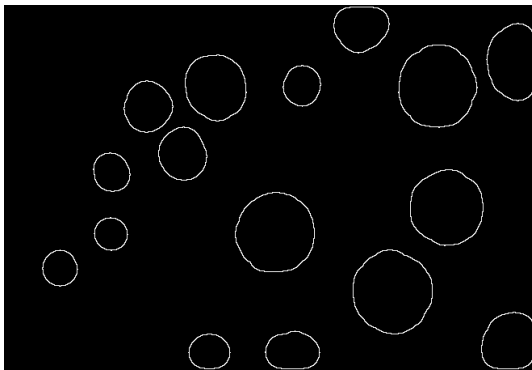
extract-cell.sh



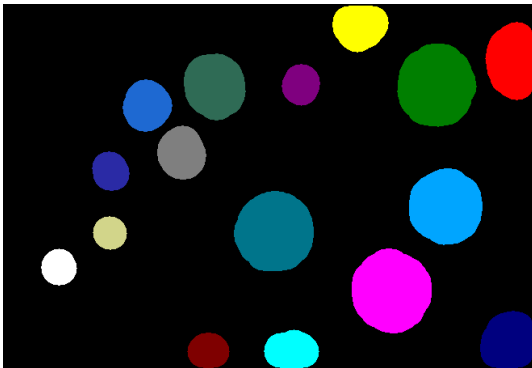
cell.png



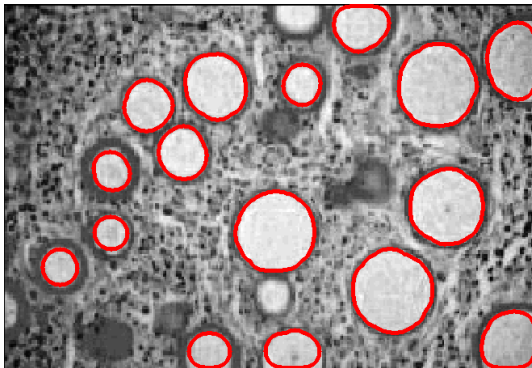
cell-res.png



cell-res-boundary.png



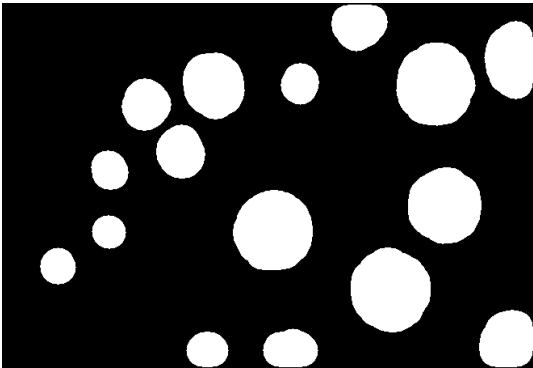
cell-res-color.png



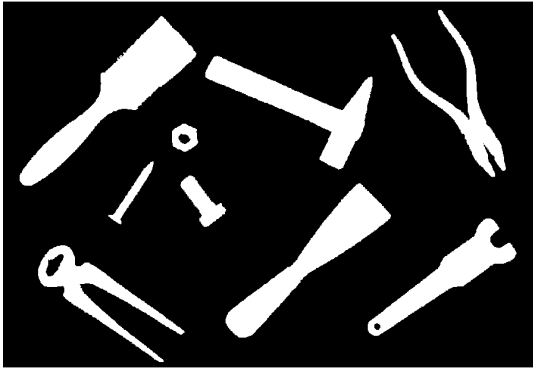
cell-final.png

distance <se-name> <ims-name> <imd-name>

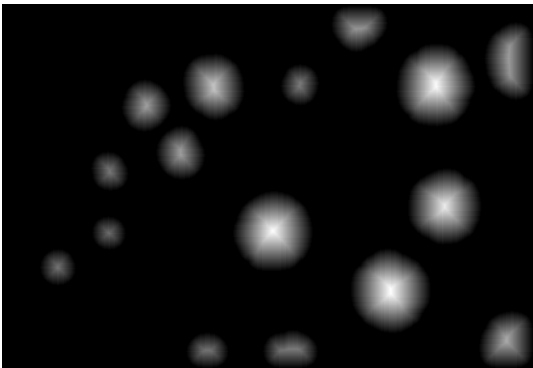
$$V_4 = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 1 & 1 \\ 0 & 1 & 0 \end{bmatrix} \quad \text{v4.png} \rightarrow \begin{bmatrix} 0 & 255 & 0 \\ 255 & 255 & 255 \\ 0 & 255 & 0 \end{bmatrix} \quad V_8 = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} \quad \text{v8.png} \rightarrow \begin{bmatrix} 255 & 255 & 255 \\ 255 & 255 & 255 \\ 255 & 255 & 255 \end{bmatrix}$$



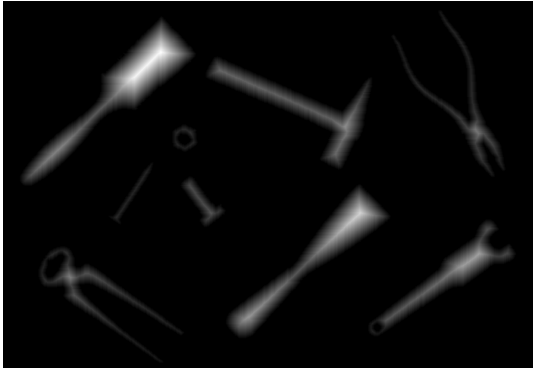
cell-bin.png



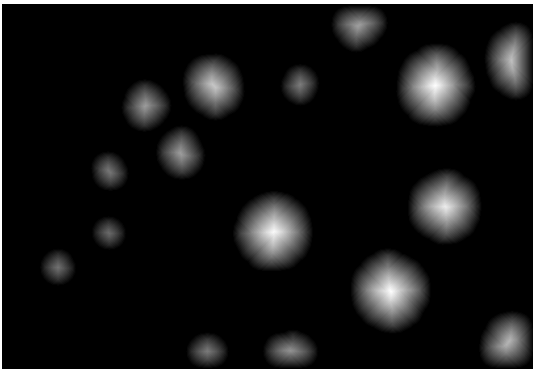
tools.png



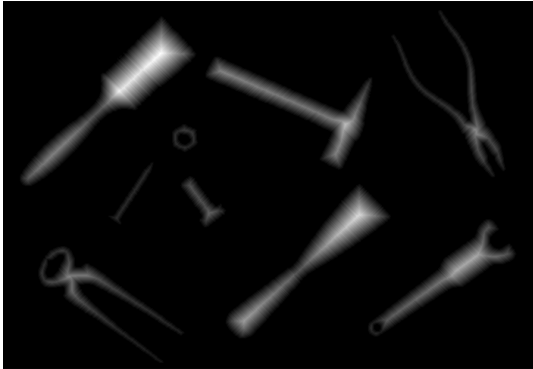
distance v4.png cell.png a.png



distance v4.png tools.png a.png



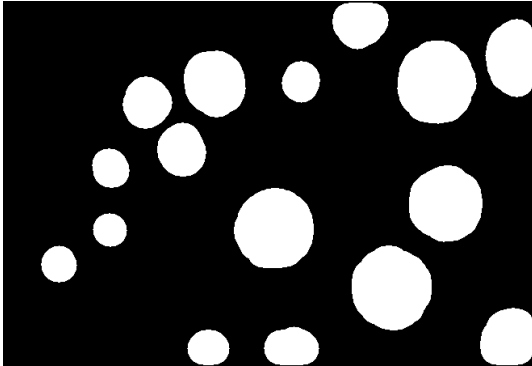
distance v8.png cell.png a.png



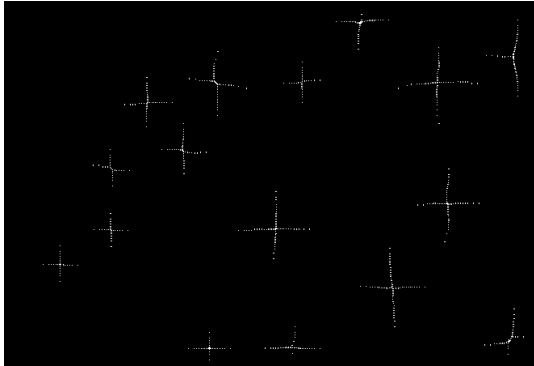
distance v8.png tools.png a.png

skeleton <se-name> <ims-name> <imd-name>

$$V_4 = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 1 & 1 \\ 0 & 1 & 0 \end{bmatrix} \quad \text{v4.png} \rightarrow \begin{bmatrix} 0 & 255 & 0 \\ 255 & 255 & 255 \\ 0 & 255 & 0 \end{bmatrix} \quad V_8 = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} \quad \text{v8.png} \rightarrow \begin{bmatrix} 255 & 255 & 255 \\ 255 & 255 & 255 \\ 255 & 255 & 255 \end{bmatrix}$$



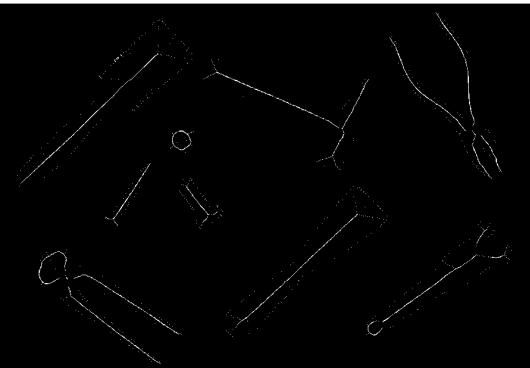
cell.png



skeleton v8.png cell.png cell-skl-v8.png

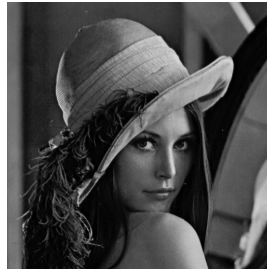


tools.png



skeleton v4.png tools.png
tools-skl-v4.png

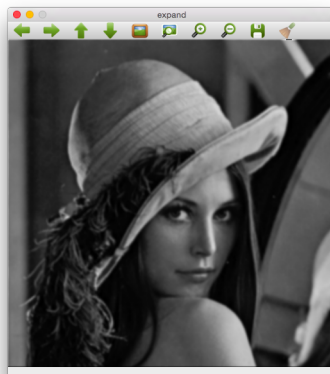
pyramid <ims>



lena_gray



reduction



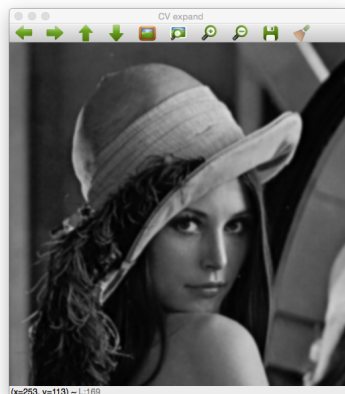
expansion



Laplacien



pyrDown



pyrUp



Laplacien (opencv)