

Hands-On 02 - Edge Detection using OpenCV

Readme

Vineet Gattani

Folder Structure:

This is the readme/report file.

The main folder is named Gattani_edge_detect.

The code folder also contains 1 cpp file (main.cpp), 1 jpg file which is the input image and one folder named 'results' which carries the screenshots of the different edge detections performed.

Procedure:

1. Setting up the project:

Create a new project and set it up for OpenCV use. Add all the necessary .dylib files to the project.

2. Compiling and running the code

Now, copy the code from the main.cpp file provided and paste it in the empty main.cpp file in the project. Make sure the image file zebra.jpg is also placed in the same folder as the main code.

Compile the project by going to `Product` → `Build`.

Now the build is succeeded, run the project by going to `Product` → `Run`.

After executing the code, four windows are displayed, each of which are:

1. Source image or the input image.
2. Canny edge detection result.
3. Laplace edge detection result.
4. Sobel edge detection result.

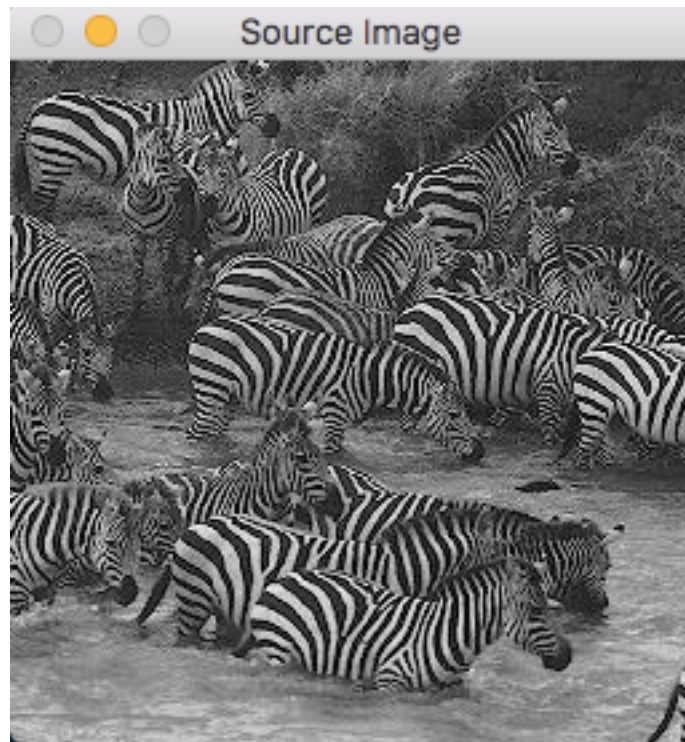
Following are the links that were followed while implementing the edge detection.

1. http://docs.opencv.org/2.4/doc/tutorials/imgproc/imgtrans/canny_detector/canny_detector.html
2. http://docs.opencv.org/2.4/doc/tutorials/imgproc/imgtrans/laplace_operator/laplace_operator.html
3. http://docs.opencv.org/2.4/doc/tutorials/imgproc/imgtrans/sobel_derivatives/sobel_derivatives.html

NOTE: This procedure is for MAC OS users only*. However the procedure to build and run may differ for windows users.

3. Results

Source Image:



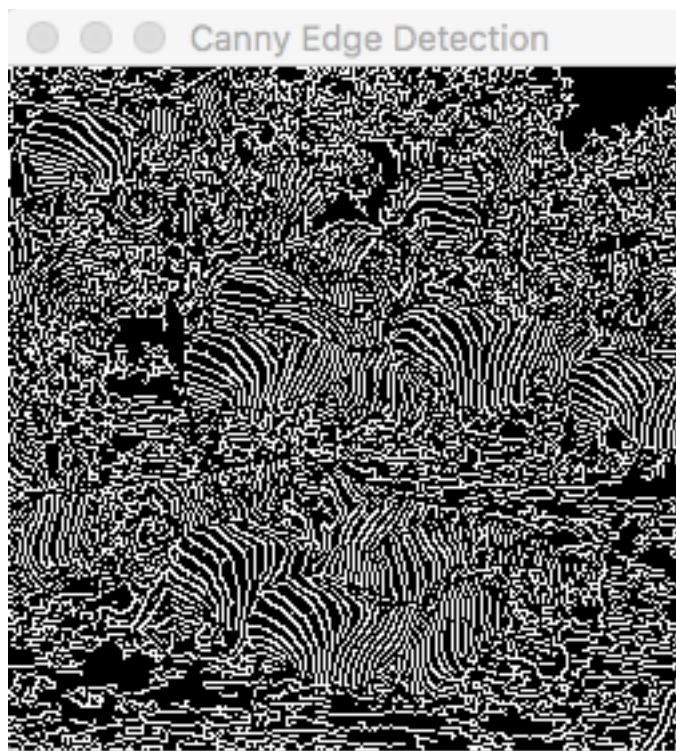
Canny Edge Detect :

Min threshold : 50

Max threshold : 150

Canny uses two thresholds (upper and lower):

- a. If a pixel gradient is higher than the *upper* threshold, the pixel is accepted as an edge
- b. If a pixel gradient value is below the *lower* threshold, then it is rejected.
- c. If the pixel gradient is between the two thresholds, then it will be accepted only if it is connected to a pixel that is above the *upper* threshold.



Sobel Edge Detect:



Laplace Edge Detect:

