In my point of view, both of my methods are better than method of Roberts, Log and Sobel. It is much clearer, which the edge of flower has been connected and less of other edges. Although it is specially for one image to design (flower.JPG), the other images also showed better results than the three methods mentioned above. However, the result of other images will be worse than result of flower. Both of my methods are using same basic idea but in different functions. I am going to explain the methods below.

At the beginning, I spend a lot time for the operators, but I found out that might no able to get good result. The problems are many and varied, which the result might has multiple edges or the edge will not complete etc. For deal with those problems, I did a lot research. One of article says LAB will give more contrast than RGB. Although it seems no any different between the results, I still remain the code to transform it. The reason is, it might have the changes that indistinguishable to the humankind eyes.

Then, through the ‘Fuzzy Logic Image Processing’ of official website of MATLAB, I saw the gradient images, which looks like relief, have clear edges. It might helpful for my method. Prof. Xiaohong Gao also told me that I could edge detect two times and merge them. This idea perfectly solves the shortage of gradient images have only one side shadow, which I could merge gradient images in x and y.

The problem is, the result gives a lot of edges of other things that I do not need. Because those edges look like the noise, I decide to use median filter to deal with it. Also, because the result is still not satisfied, I made a loop to filter it in two different neighborhoods. The finial result looks much better, but it still has the ‘noise’ that just much lighter. It also has disadvantage that I used the loop, so the whole method will take longer period for processing. (MethodMyself2)

Few days after, I found the bwareaopen and imdilate function. The bwareaopen function could remove the objects that lower than given number. The imdilate function could use to link the lines. I have able to use those functions to clean the ‘noise’ and remain the main edge. To compare with first method, it is quicker and cleaner, but I think both methods are good. Therefore, I decide keep those methods in the folder. (MethodMyself1)