Roberts operator (threshold: 30)

Prewitt edge detector (threshold: 24)

Sobel edge detector (threshold: 38)

Frei and Chen gradient operator (threshold: 30)

Kirsch compass operator (threshold: 135)

Robinson compass operator (threshold: 43)

Nevatia-Babu 5×5 operator (threshold: 12500)

“python R11922150_HW9.py” to run the program.

In this homework, I set the same thresholds as those in the homework instructions. In my code, the xygenerator is a generator that can generate x,y given the kernel size (e.g. given kernel size = 3, it will generate (-1,-1),(-1,0),(-1,1),(0,-1),(0,0),(0,1),(1,-1),(1,0),(1,1)). And the padding function is to pad the image with border value. Finally, the edge_detection function is an implementation of the algorithm mentioned in the lecture slides. With the weights set correctly, we can obtain the result above.