Computer Vision Homework 9 Report B06507002 材料三 林柏勳

Assignment

Write programs to generate the following gradient magnitude images and choose proper thresholds to get the binary edge images:

1. Roberts operator
2. Prewitt edge detector
3. Sobel edge detector
4. Frei and Chen gradient operator
5. Kirsch compass operator
6. Robinson compass operator
7. Nevatia-Babu 5×5 operator

Introduction

B06507002_HW9_ver1.zip contains

1. HW9_B06507002.pdf
2. HW9_B06507002.py

where 1. is the report and 2. is my source code.

One can reproduce this assignment by putting “lena.bmp” and “HW9_B06507002.py” in the same folder and running “HW9_B06507002.py”. Then, 7 processed images and 2 merged images will be dumped.

Original Lena

Original Lena

Result

I use python 3 as my programming language, where I import numpy, opencv to do matrix calculation and image IO. I will let t=threshold for simplicity.

Robert with t=12

Prewitt with t=24

Sobel with t=38

Frei and Chen with t=30

Kirsch with t=150

Robin with t=50

Nevatia and Babu with t=11100