Machine Vision

Homework#2

Deadline: 2024/04/03 23:59:59

Robot Vision Lab (Room 1421)

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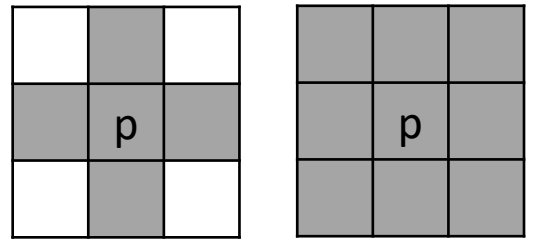
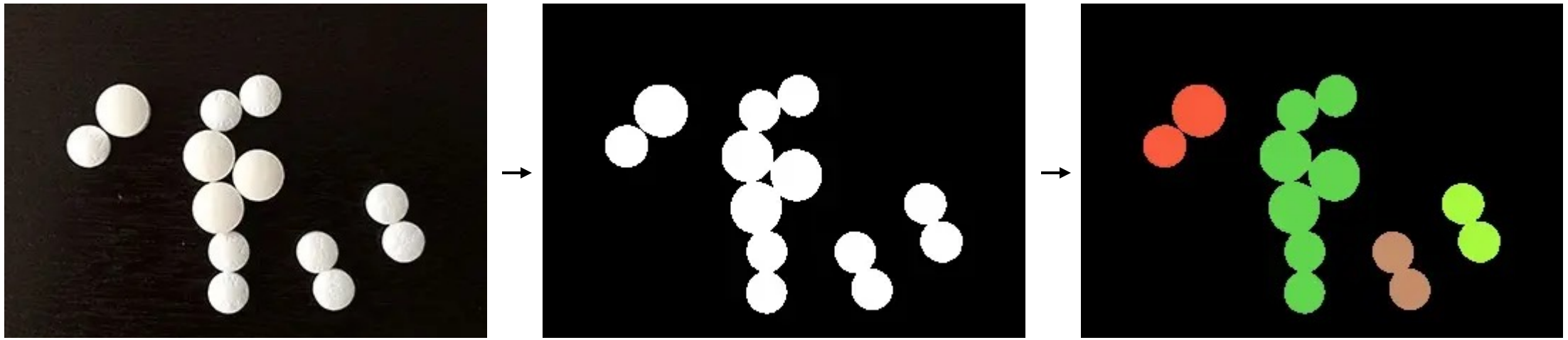
HW#2



4-connected 8-connected

1. Component Labeling
   - Convert the color image to a binary image.
   - Labeling components using 4-connected and 8-connected.
   - Output color image.



HW#2

- Report
  - Student ID
  - Name
  - Describe the main part of your method
  - Result image

HW#2

- Rules in using C/C++ OpenCV Lib
  - ➢Use OpenCV-2.x version
  - ➢Allow use:
    1. Read, save, show image (cvLoadImage, cvShowImage, …)
    2. Define image (Mat)
    3. Get image size (cvSize, cvGetSize)
  - ➢Not Allow use:
    1. Cannot use the function of Lib to do the main part of homework.

       Example: cvtColor(image, gray, CV_RGB2GRAY); // convert RGB to Gray

HW#2

- Rules in using Python OpenCV Lib
  - ➢ Allow use:
    1. Read, save, show image (cv2.imread, cv2.imshow, …)
    2. Define image
    3. Get image size
  - ➢ Not Allow use:
    1. Cannot use the function of Lib to do the main part of homework.

       Example: cv2.cvtColor(image, cv2.COLOR_BGR2GRAY) // convert RGB to Gray

HW#2

- Grade
  - Program(80%)
  - Report(20%)

HW#2

- Folder Structure
  - ➢There are 8 images in the results folder.
  - ➢Write homework on the one program.

Python

```
112598008_hw1/
├── images/
│   ├── img1.jpg
│   ├── img2.jpg
│   ├── img3.jpg
│   └── img4.jpg
├── results/
│   ├── img1_4.jpg
│   ├── img1_8.jpg
│   ├── img2_4.jpg
│   ├── img2_8.jpg
│   ├── img3_4.jpg
│   ├── img3_8.jpg
│   ├── img4_4.jpg
│   └── img4_8.jpg
├── 112598008_hw1.py
├── 112598008_hw1.pdf
└── Readme.txt (Optional)
```

C/C++

```
112598008_hw1/
├── project_hw1/
│   ├── images/
│   │   ├── img1.jpg
│   │   ├── img2.jpg
│   │   ├── img3.jpg
│   │   └── img4.jpg
│   ├── results/
│   │   ├── img1_4.jpg
│   │   ├── img1_8.jpg
│   │   ├── img2_4.jpg
│   │   ├── img2_8.jpg
│   │   ├── img3_4.jpg
│   │   ├── img3_8.jpg
│   │   ├── img4_4.jpg
│   │   └── img4_8.jpg
│   ├── include/
│   │   └── func.h
│   ├── func.cpp
│   └── main.cpp
├── 112598008_hw1.pdf
└── Readme.txt (Optional)
```

HW#2

- Please compress your files.
  - Example: 112598008_hw2.zip
- Deadline: 2024/04/03 23:59:59
  - For each hour late, 10% of the total score will be deducted.
- Don’t share your code and your report with other students.

  Do it by yourself.