美丽阅读

Book Spine Segment By Python

Overview

Book Spine Segment Method was implemented by Python language with the help of three party libs, eg. OpenCV, Numpy, Networkx, etc.

Structure

- main.py

  main.py is the main entry of this implementation, which is consist of the flowing four py files. Especially, it is also contain the extraction of **gradient, angle** for input image, **Graph** processing for each possible candiate rectangle **CRs**, and write the results of **Book Spine Segment** to the fixed directory**(For example "./Example/Dst")**.

- SelectImg.py

  SelectImg.py is used to obtain one stablization picture from camera (webcamera).

- LsdLine.py

  In this python file, lines detected by the Line Segment Detector **LSD** algorithm are filtered by their length and changes between horizontal and vertical.

  Note that: For using of **LSD** algorithm, you need install opencv3.0 or later version. Besides, **opencv_contrib** also should be installed.

- Seeds.py

  Seeds.py is in charge of spreading seeds around filtered lines and storing the corresponding directions of seeds.

- Point4.py

  Point4.py is used to obtain the CR's four points by considering the energy changing on edges around the seeds in image.

- FilterCR.py

  Due to the book spine usually does have different ratio of width ang height. FilterCR.py filtering the **CRs** whose ratio is smaller than a predefined threshold.

- MWIS.py

  MWIS.py is a python version of "Maximum weighted independent set" algorithm. It's used to obtain the final index of CRs for a bookspine picture.

Usage

```
if cameraOpen is set True:
    InputImg = SelectImg.SelectImgFromCamera()
else:
    input : argv[1] or image path
    output: book spine segment images which store in './Example/Dst'
    Usage :
    $ python <name>.py --image=<imagepath>
    eg:
    $ python main.py --image='./Example/Src/002.jpg'
```

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