Principles and Applications of Digital Image Processing

Fall, 2021

作業一

賴乙豪 B06611008

Part 1:

2.5

(a)

(b)

2.12

The image has distribution range [0 255], the change of intensity level must be bigger than 8 to avoid false contouring, so it can be calculated as following

The largest k will be 5.

2.18

consider value = V and draw adjacent like following

|  |  |  |
| --- | --- | --- |
| path | (a) V = {0,1} | (b) V = {1,2}, |
| 4 | Length = 0, cause p can’t reach q | Length = 6 |
| 8 | Length = 4 | Length = 4 |
| m | Length = 5 | Length = 6 |

2.36

To create single, composite transformation functions just multiply to matrices

(a)

(b)

(c)

(d)

Try perform different order of (a)

Yes, It does has difference. The order of multiplication means the order to do the transformation and the result image will have a bit difference.

3.12

First write functions of Pr and Pz.

Then, transformation function can be deduced easily

3.21

Using zero padding

(a)

Ans =

(b)

Yes, the sum of the pixels in the original and filtered images is not the same, because the kernel isn’t normalized.

Part 2:

按鈕一一對應各題的要求

4到7題將只針對第2題的Ａ的結果進行調整