Computer Vision — Homework 6

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1 Yokoi connectivity number

先將原圖 lena.bmp 做 binarize,再把原本 512×512 大小的 binary[][],以 8×8 為一單位,拿最左上的 pixel 作為 downsample 的 data,最後成為 down[][]。

Source Code

```
i in range(down_rows):
                 j in range(down_cols):
                     x1, x2, x3, x4, x5, x6, x7, x8 = [0] * 9
down[i][j] != 0:
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                             down[i][j]
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                                  down[i
                                              1][j]
                                            0:
                                        down[i - 1][j - 1]
                                        < down_cols:
                                        down[i
                                                   1][j + 1]
                                        down[i + 1][j - 1]
                                        < down_cols:
down[i + 1][j + 1]
                                  down[i][j-1]
                                  down_cols:
down[i][j +
                               = [h(x0, x1, x6, x2), h(x0, x2, x7, x3), h(x0, x3, x8, x4), h(x0, x4, x5, x1)] count.count('q')
                      yokoi[i][j] = temp
if count.count('r')
                           yokoi[i][j] =
                           down_cols
                      end
                      e: end
                     yokoi[i][j] == 0:
print (' ', end = end, file = data)
                 else: print (yokoi[i][j], end = end, file = data)
```

LINE 36-54: Go through all the pixels in down[][]. When the pixel is white, this pixel is x_0 , and the other pixels around it are $x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8$.

LINE 55-58: See how many 'q' for each pixel. The number of 'q' is Yokoi connectivity number for the pixel. However, if the list for the pixel is [r, r, r, r], its Yokoi connectivity number is 5.

This function is to judge which one to input, 's', 'r' or 'q'.

結果圖

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Figure 1: Yokoi Connectivity Number