Test (March 21, 2017)

1) Implement the image enhancement on the Page 75 of the lecture 2. The input image is T1_1.tif.

2) Implement the whole procedure listed on the pages 85 and 86 of the lecture 2. The input image is T1_2.

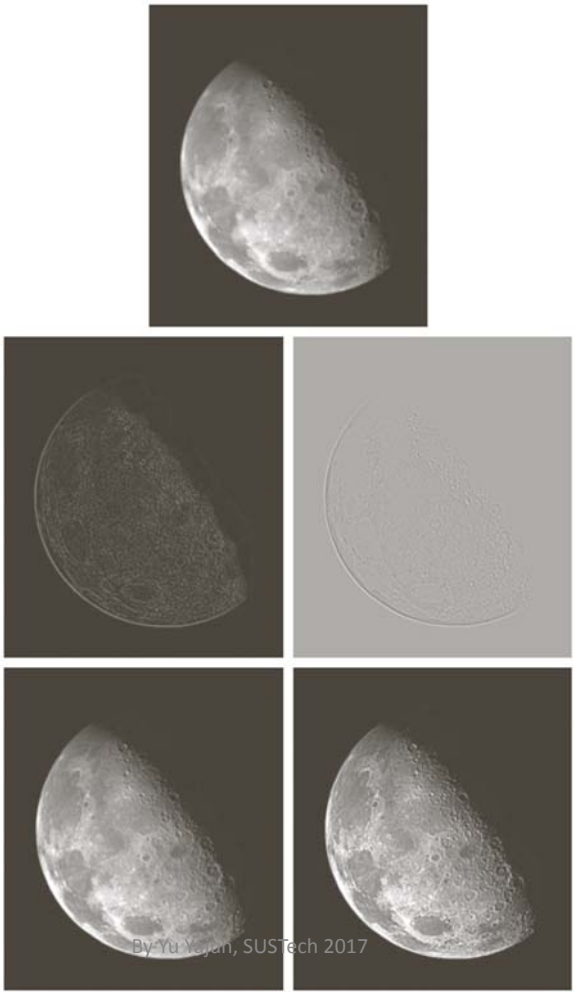
Page 75

0	1	0
1	−4	1
0	1	0

Figure 3.37(a)

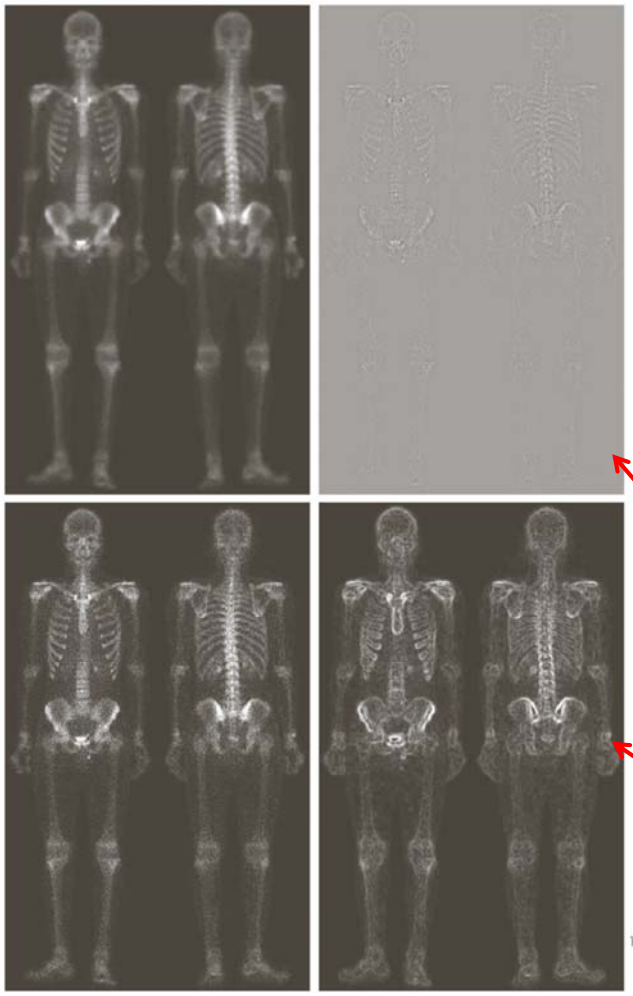
1	1	1
1	−8	1
1	1	1

Figure 3.37(b)



a
b c
d e

FIGURE 3.38 (a) Blurred image of the North Pole of the moon. (b) Laplacian without scaling. (c) Laplacian with scaling. (d) Image sharpened using the mask in Fig. 3.37(a). (e) Result of using the mask in Fig. 3.37(b). (Original image courtesy of NASA.)



a b
c d

FIGURE 3.43
(a) Image of whole body bone scan.
(b) Laplacian of (a). (c) Sharpened image obtained by adding (a) and (b).
(d) Sobel gradient of (a).

−1	−1	−1
−1	8	−1
−1	−1	−1

−1	−2	−1	−1	0	1
0	0	0	−2	0	2
1	2	1	−1	0	1

Example:
Combining Spatial Enhancement Methods

Goal:
Enhance the image by sharpening it and by bringing out more of the skeletal detail

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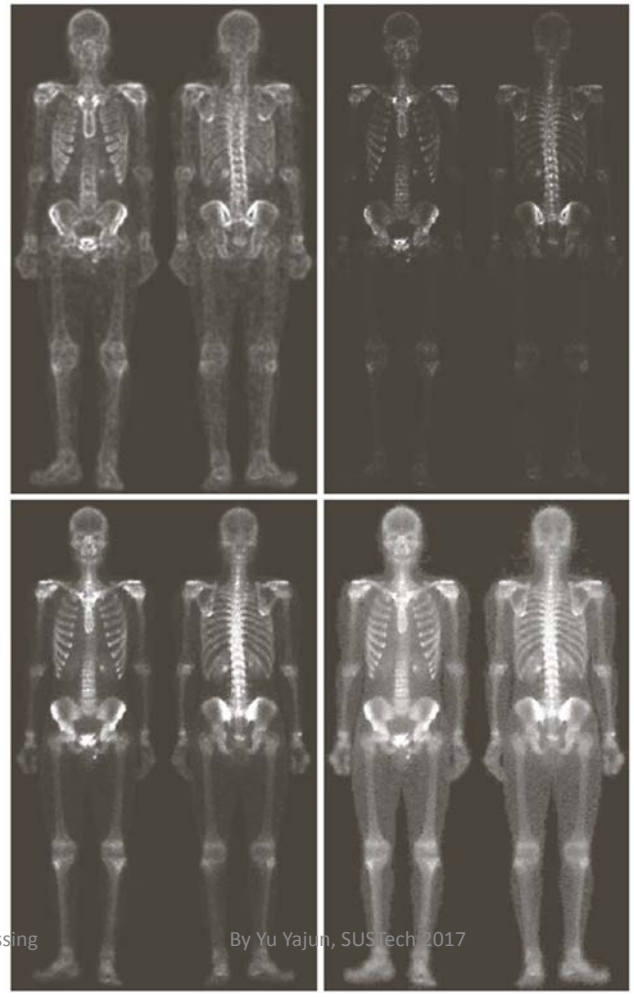
Page 86

Example:

Combining Spatial Enhancement Methods

Goal:

Enhance the image by sharpening it and by bringing out more of the skeletal detail



e f
g h

FIGURE 3.43
(Continued)
(e) Sobel image smoothed with a 5 × 5 averaging filter. (f) Mask image formed by the product of (c) and (e).
(g) Sharpened image obtained by the sum of (a) and (f). (h) Final result obtained by applying a power-law transformation to (g). Compare (g) and (h) with (a). (Original image courtesy of G.E. Medical Systems.)