Algorithms and Application in Computer Vision - 046746

Homework #1

Alexander Shander

Vladimir Tchuiev 309206795

Technion - Israel Institute of Technology

I. Part 2

A. Part 2b

The default format for image data in Matlab is **uint8**. This format does not support negative numbers that result from subtraction of image data matrices (all $L_l[I]$ except for $l = n$), thus when reconstructing back the original image the reconstruction is not accurate (Fig 1a) and results in a bloom effect. To solve this problem, the image data needs to be converted to **double**, thus supporting negative values. This allows for an accurate reconstruction (Fig 1b).

| (a) | (b) |

Figure 1: **(a)**: recreated image from uint8 laplacian pyramid. **(b)**: recreated image from double laplacian pyramid