Foundation of Computer Vision
Programming Assignment 2

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28 February 2016

1. Bilateral Filter

For the bilateral filter, i first converted the image into LAB and extracted L,A, and B values. Then padded this each LAB values by 4*4. Also, created a window of 9*9 and then using the formula calculated the necessary values for each pixel by using four for loops but got stuck in calculating the results. So i have used the cv2 inbuilt function and got the filtered image needed for cartoon image.

Figura 1: Cartoon image and its Bilateral Output

2. Canny Edge Detection

For the canny edge detection,i blurred the image using cv2's Gaussian blur function and then calculated x and y values using Sobel function. Then caclulated the edge gradient(magnitude) and theta from the above values. But then was not able to figure out for non suppression part.So i used the cv2 inbult function to get canny edge output needed for the cartoon image.

Figura 2: Castle image and its Canny Edge Detection output

3. Cartoon Image

For the cartoon image, the function takes the two parameters i.e. bilateral output and the canny output. It then computes and produces the cartoon image from it. The output is display below:

Figura 3: Castle image and its cartoon image