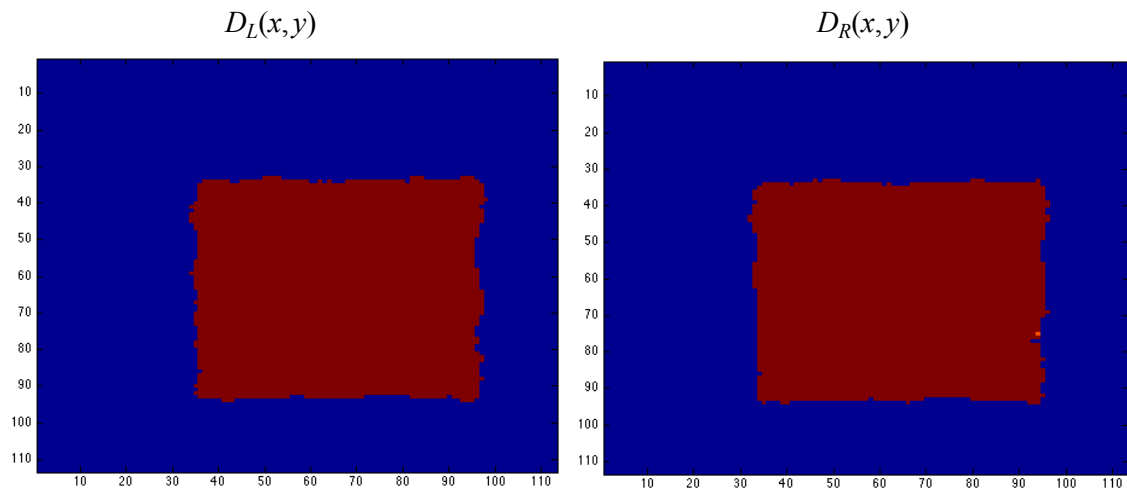
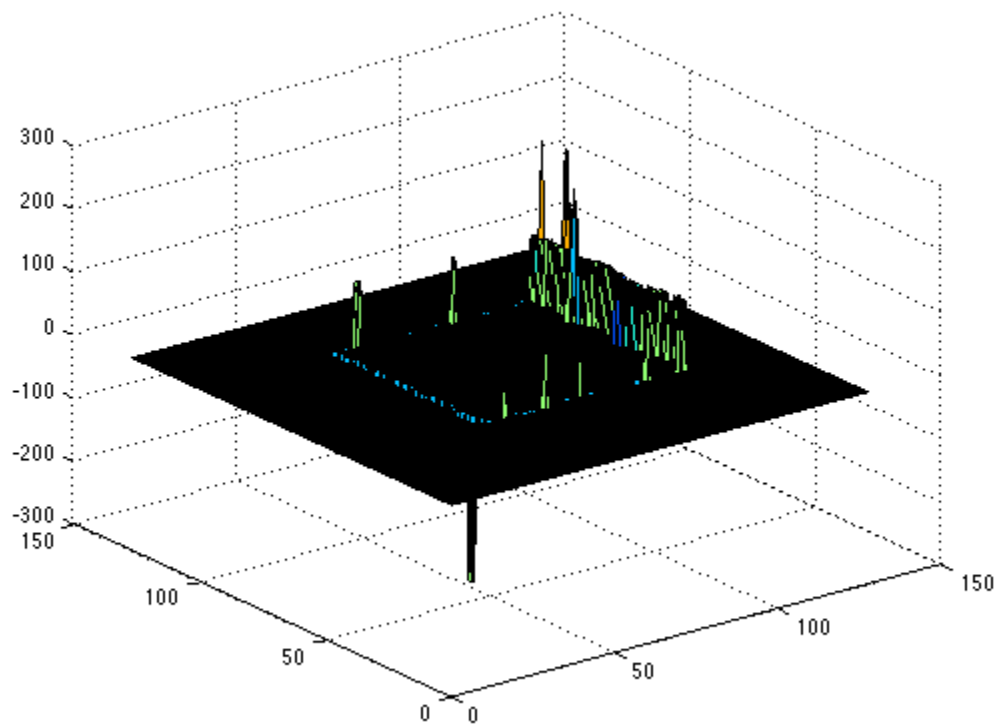


Problem Set 2
CS4495 - Fall2014
Cristina Chu (cchu43)

Part 1



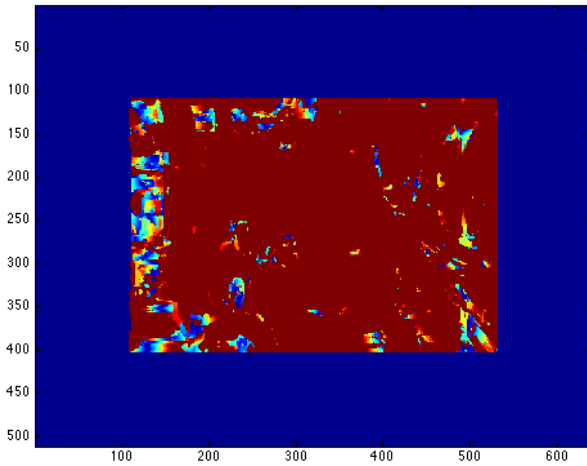
3D plot - difference $D_L - D_R$



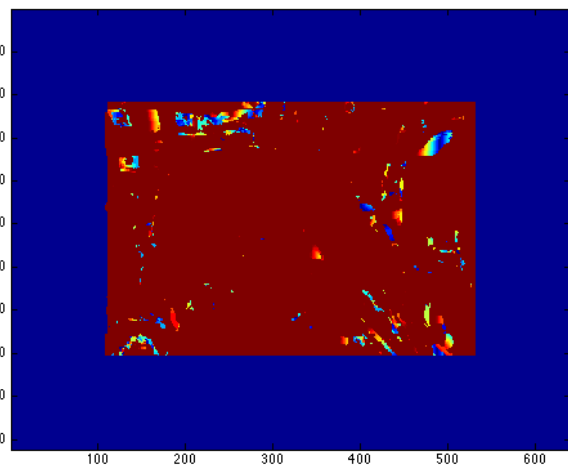
In this 3D plot it can be noted the differences in both disparity images which are the spikes protruding from the flat darks surface.

Part 2

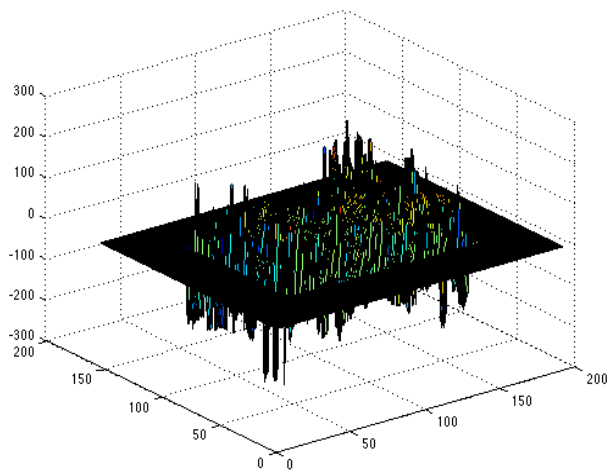
$D_L(x,y)$



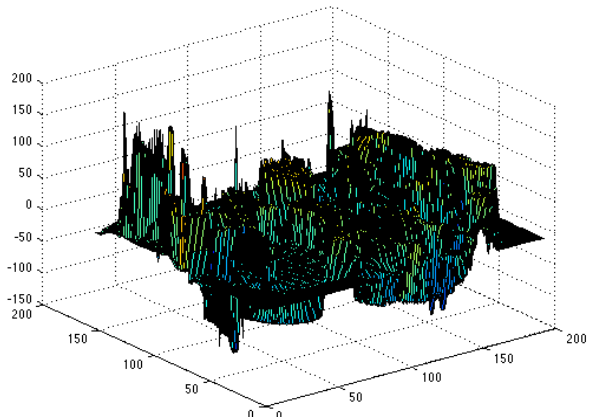
$D_R(x,y)$



3D plot - difference $D_L - D_R$



3D plot - difference $trueD_L - trueD_R$



Comparing both the 3D plot of $D_L - D_R$ and the 3D plot of $trueD_L - trueD_R$, it can be noted that the true disparities have more details on the differences between the images. This is definitely because my disparity images are not very good, thus not showing as much detail as the true disparity images.

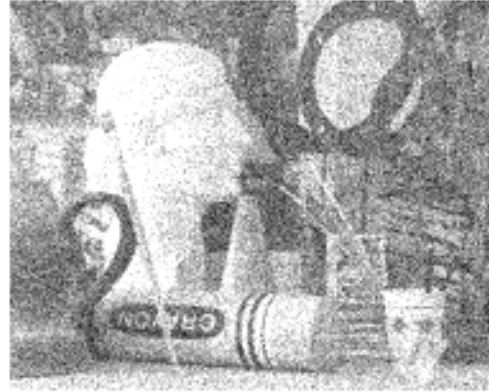
Part 3

a. Gaussian Noise

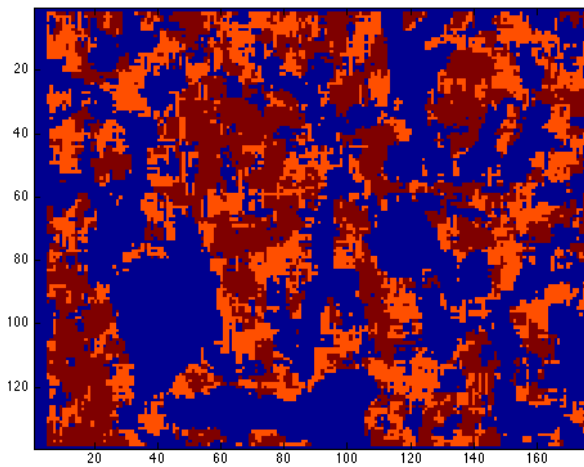
Left image with noise



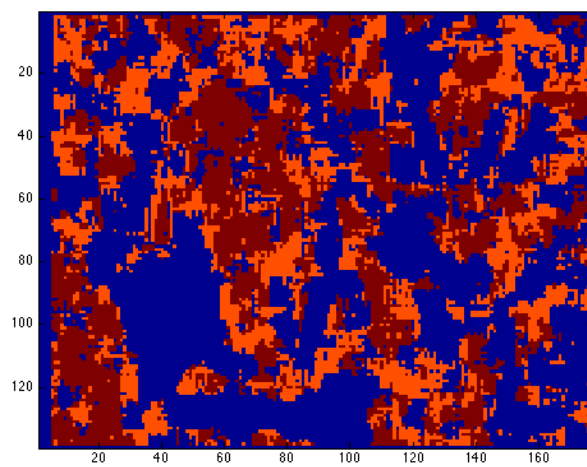
Right image with noise



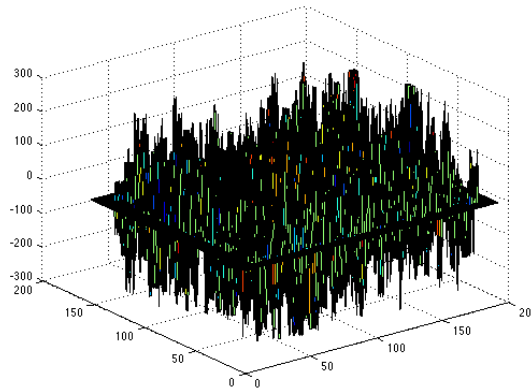
$D_L(x,y)$



$D_R(x,y)$



3D plot - difference $D_L - D_R$



As expected, once the images were added noise, the disparity images started to detect a lot of differences. In comparison with the results from part 2, the noise added to part 3 increases the differences and it also blurrifies the details on my disparity images, which are already fuzzy.

b. 10% Contrast Increase

I was not able to obtain disparity images when the intensity of the images were increased by 10% (i.e. multiplied by 1.1). This was probably due to poor choice on disparity range or window size (even though I tried several ones, I was not able to find one that worked).

Part 4

I was not able to implement the normalized correlation, but thinking about what it would change in relation to SSD, the images would probably had looked a lot closer to the true disparities than before.