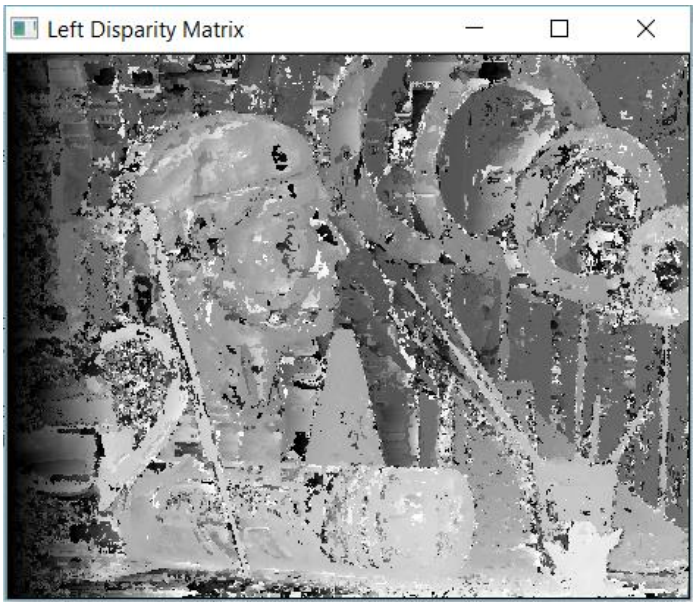
CSE 473/573 Summer 2017 - Programming Assignment 2

1. Stereo Vision

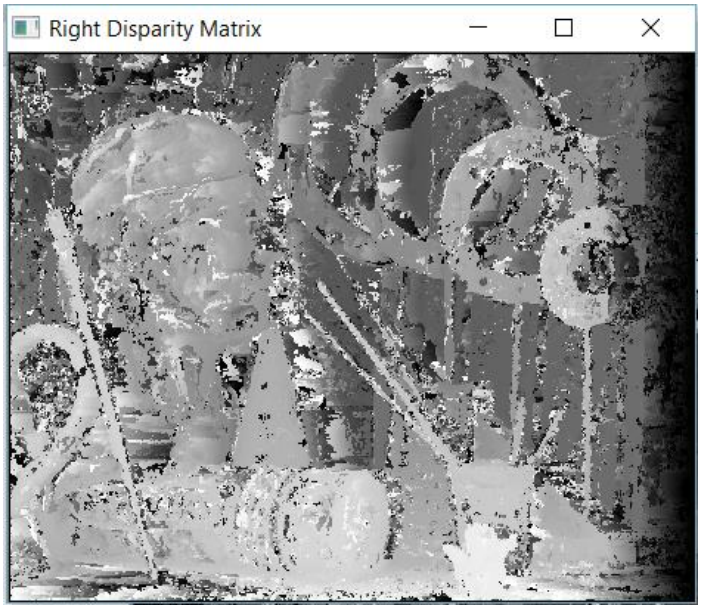
1.1 Disparity estimation using block matching

a. For 3X3 window

Following is the (left) disparity image of the view1 image -

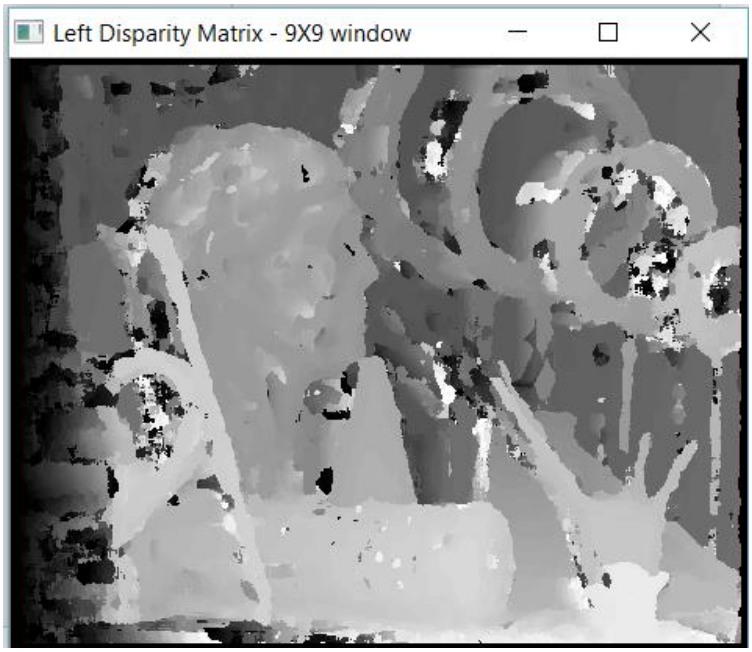


Following is the (right) disparity image of the view5 image -

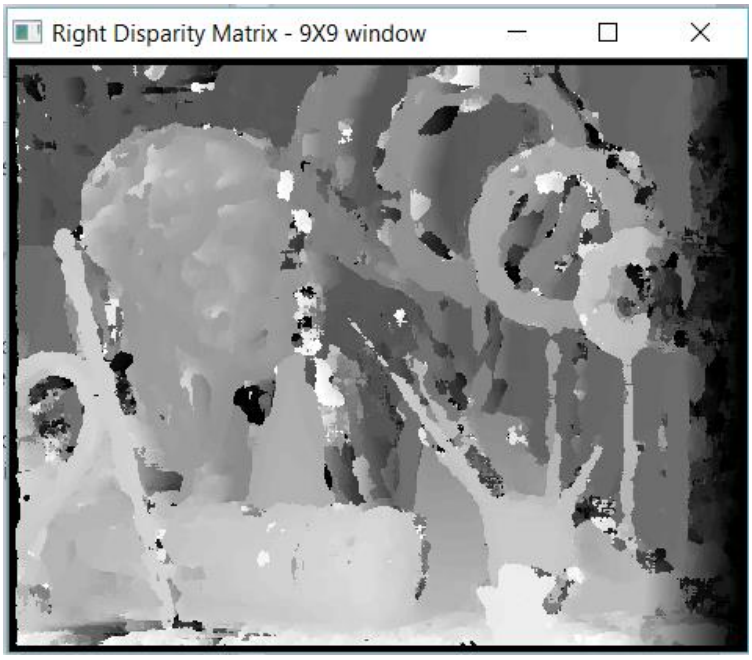


For 9X9 window

Following is the (left) disparity image of the view1 image -



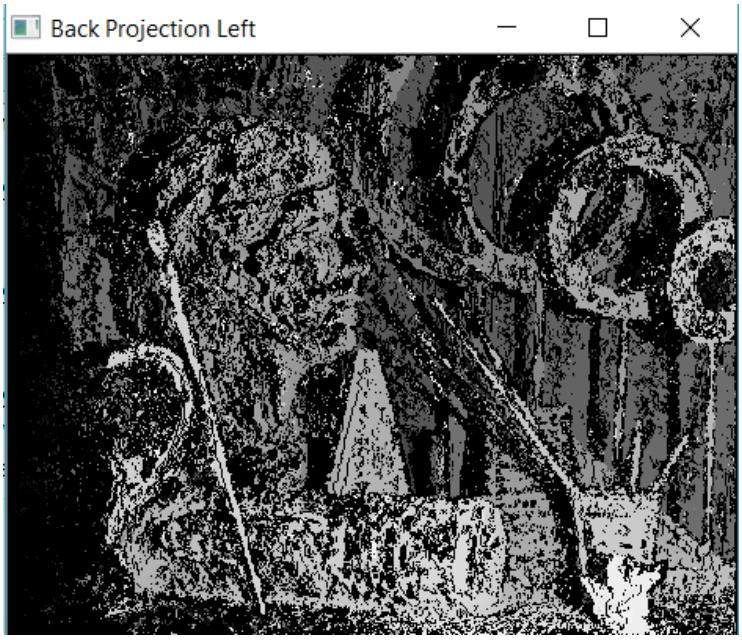
Following is the (right) disparity image of the view5 image -



1.2 Consistency check

a. For 3X3 window

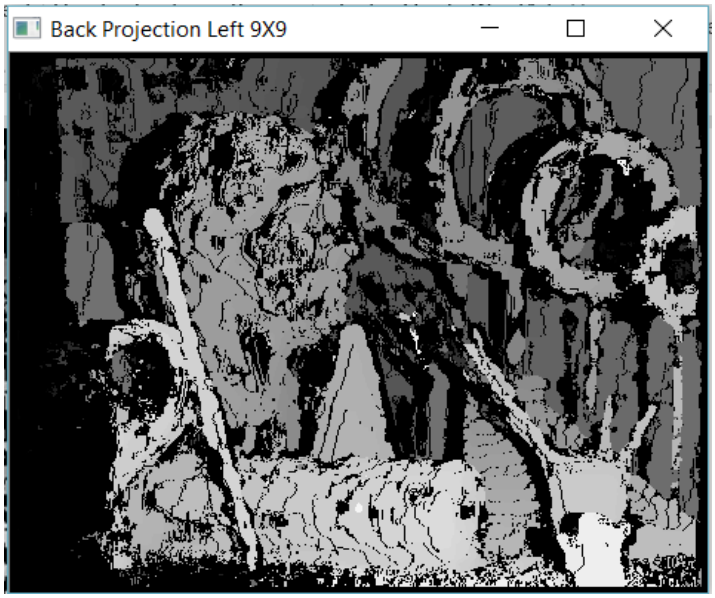
Left Back Projection Image



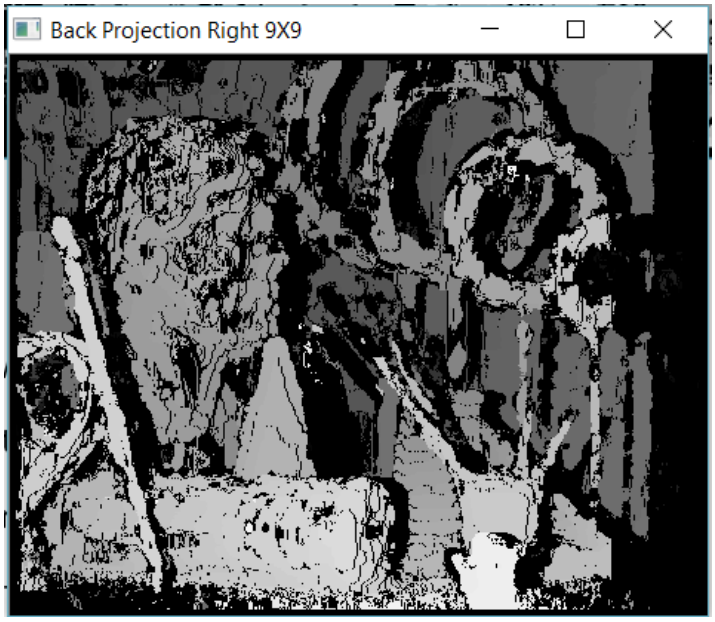
Right Back Projection Image

b. For 9X9 window

Left Back Projection Image



Right Back Projection Image



Mean Square Error of Above (Disparity and Back Projection) Images:

3X3 Window

Left Disparity Map - 395.435520402

Right Disparity Map - 272.509158835

Back Projection Left – 47.7056914366

Back Projection Right – 45.2385383223

9X9 Window

Left Disparity Map - 312.57593252

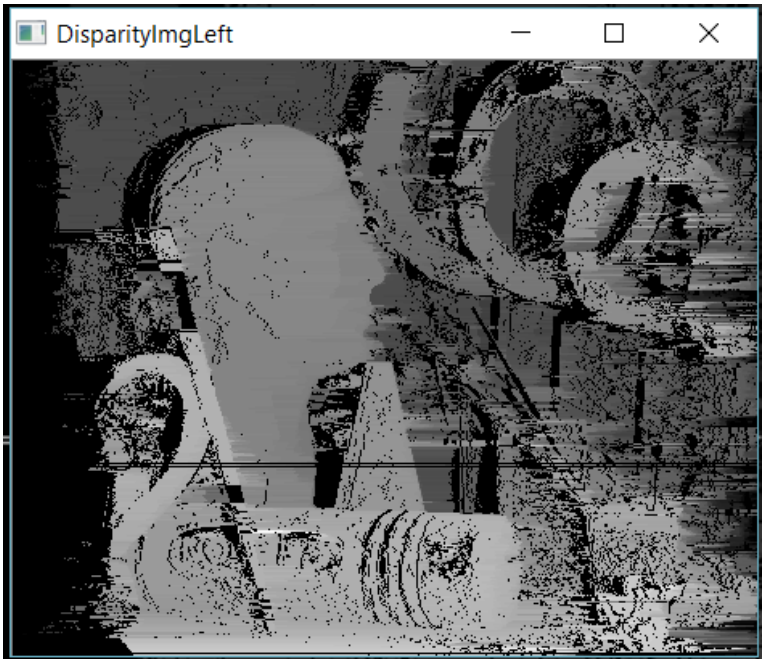
Right Disparity Map - 188.57380188

Back Projection Left – 20.7479248147

Back Projection Right – 21.2137586831

1.3 Dynamic Programming

Left Disparity -

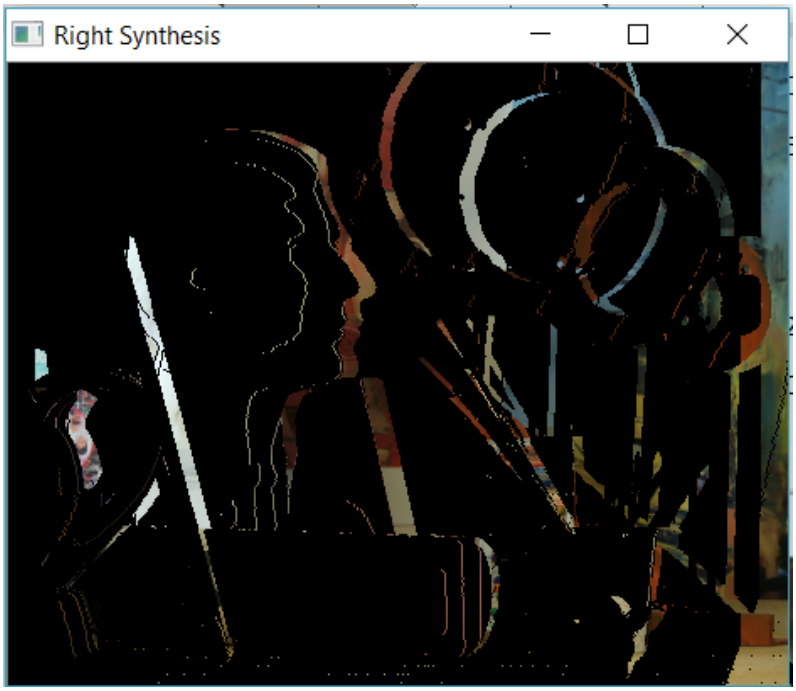


Right Disparity -

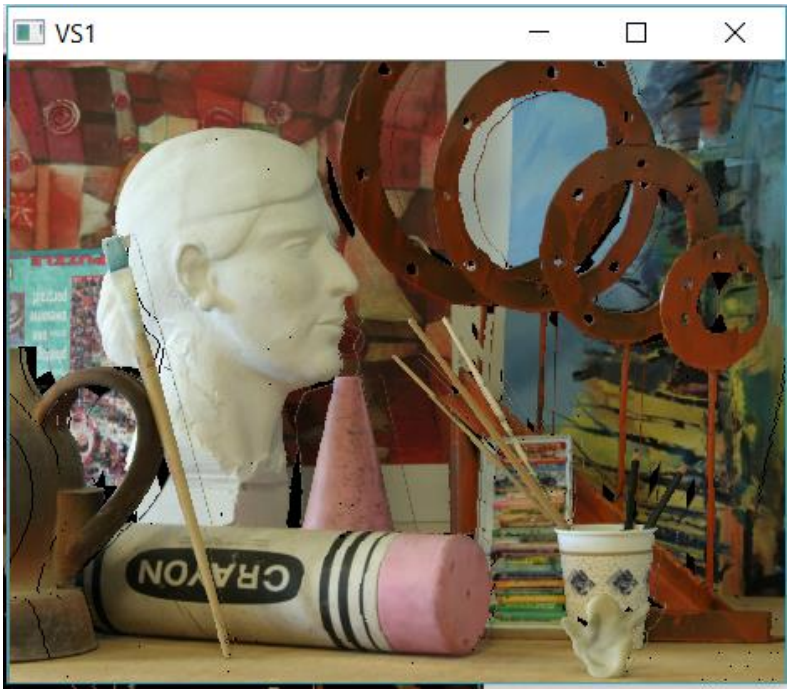
1.4 View Synthesis

Following is the (left) view synthesis of view 1 image:

Following is the (right) view synthesis of view5 image:



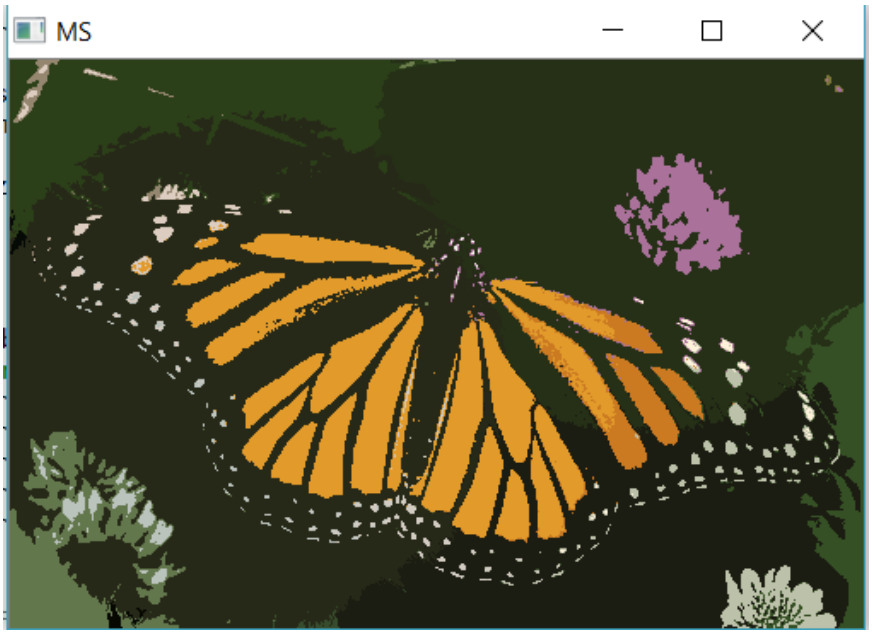
From the above two images we get the following image -



2. Mean Shift Segmentation –

h = 180

iter1 = 40



h = 160

Iter1 = 40