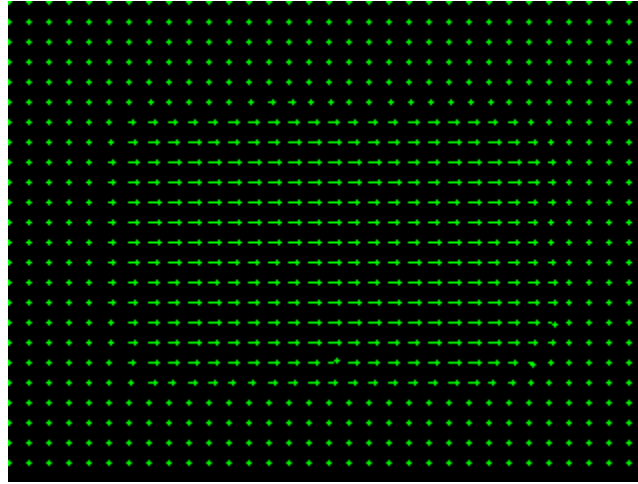


Computer Vision (Spring 2019) Problem Set #4

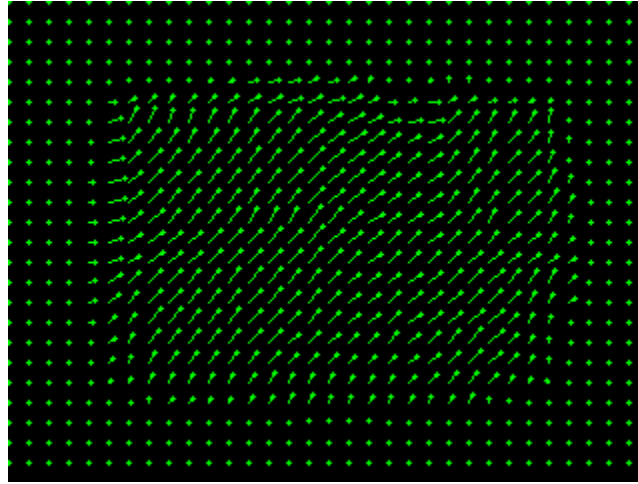
Jijun HU
jijun.hu.0930@gatech.edu

1a: Base Shift0 and ShiftR2



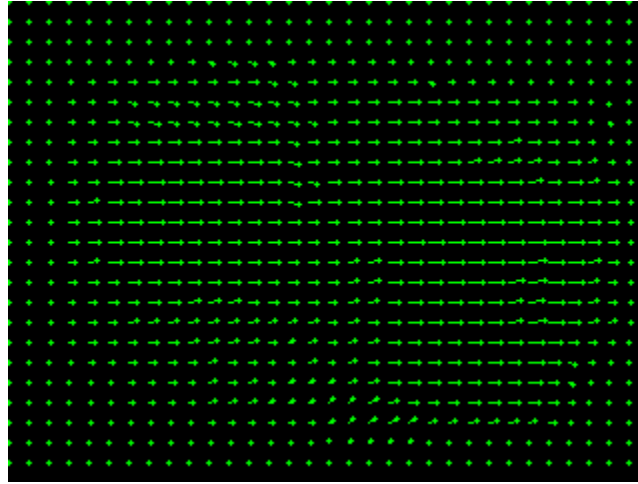
ps4-1-a-1

1a: Base Shift0 and ShiftR5U5



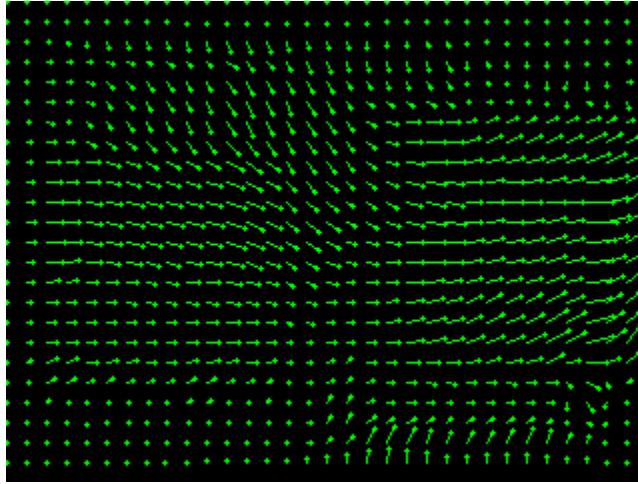
ps4-1-a-2

1b: Base Shift0 and ShiftR10



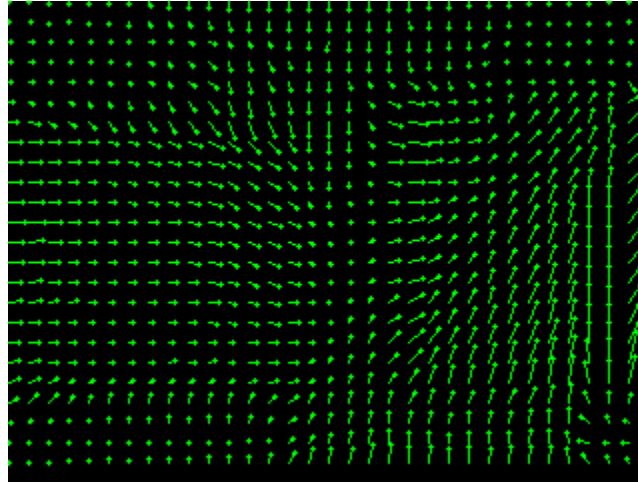
ps4-1-b-1

1b: Base Shift0 and ShiftR20



ps4-1-b-2

1b: Base Shift0 and ShiftR40



ps4-1-b-3

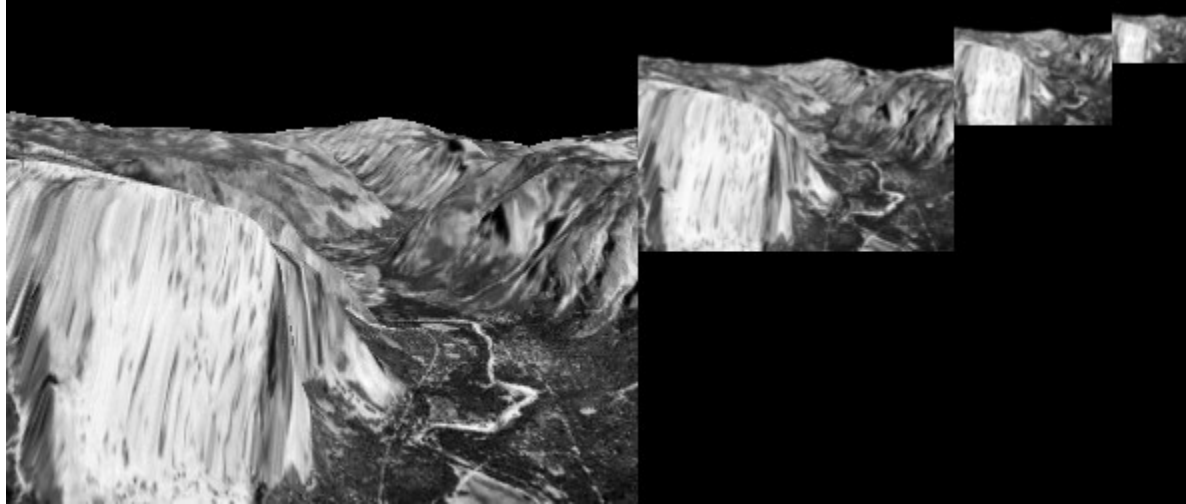
1b: Text Response

Does LK still work? Does it fall apart on any of the pairs? Try using different parameters to get results closer to the ones above. Describe your results and what you tried.

I think LK does NOT work in these cases.

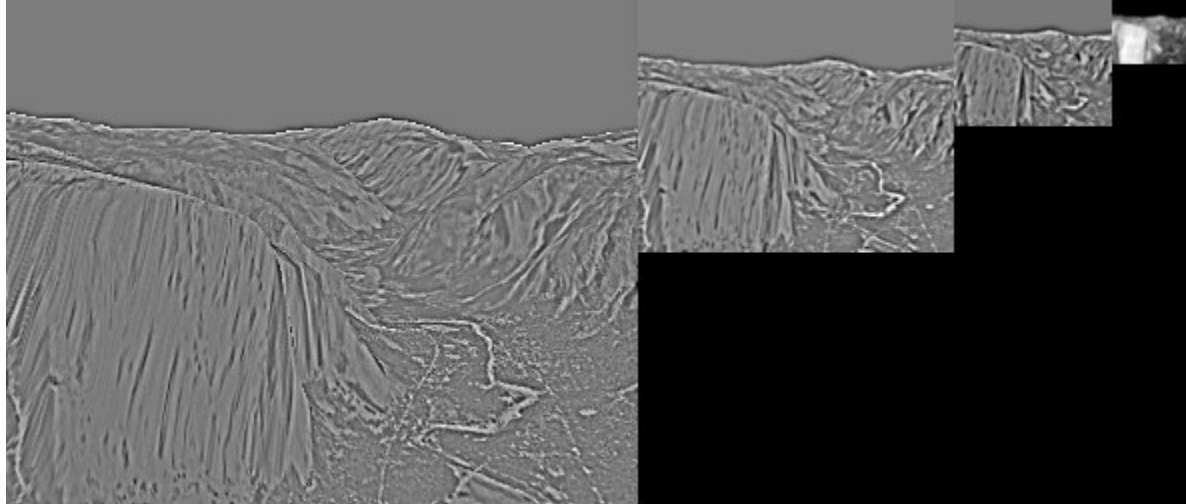
It falls apart for pairs: ShiftR0 vs ShiftR20 and ShiftR0 vs ShiftR40. I tried different parameters for kernel size and also tried to pre process the image (blurring), but it still doesn't work well.

2a: Gaussian Pyramid



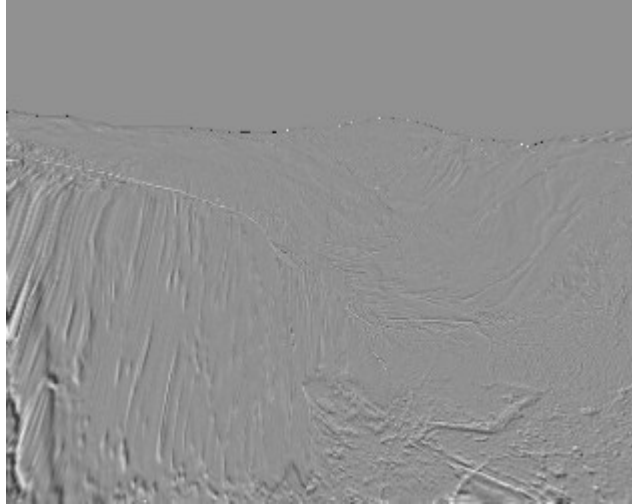
ps4-2-a-1

2b: Laplacian Pyramid



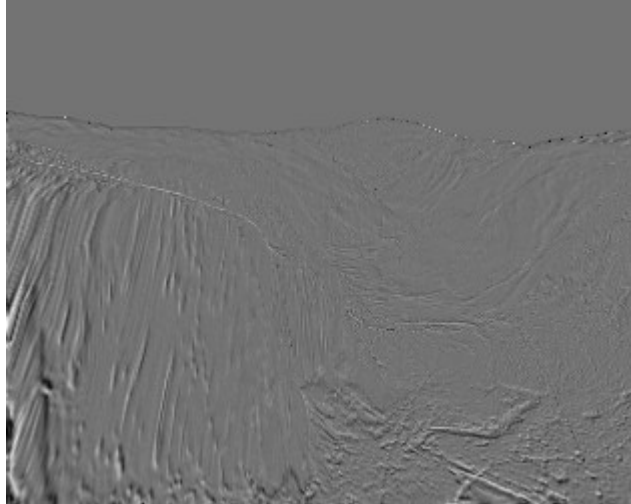
ps4-2-b-1

3a: Difference images



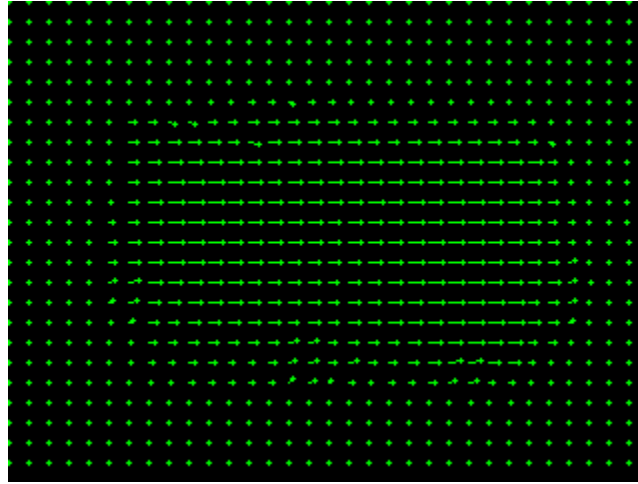
ps4-3-a-1

3a: Difference images (cont.)



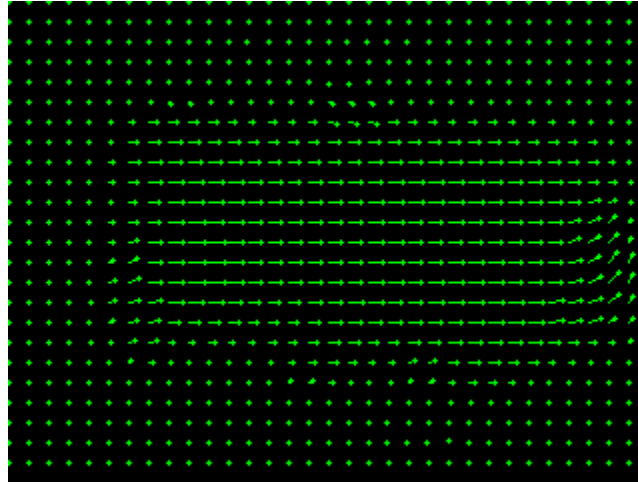
ps4-3-a-2

4a: Hierarchical LK



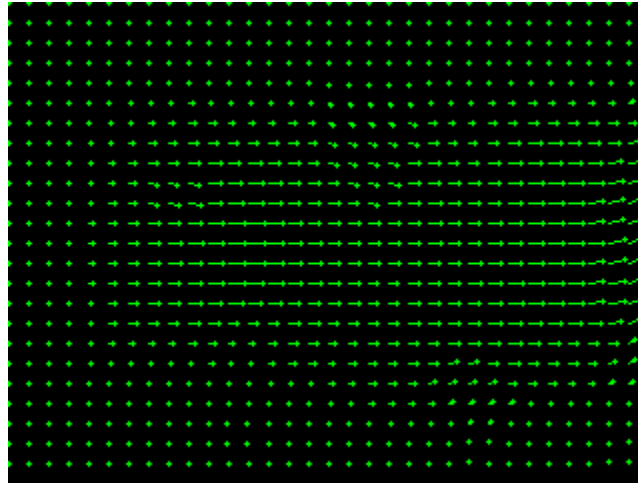
ps4-4-a-1

4a: Hierarchical LK (cont.)



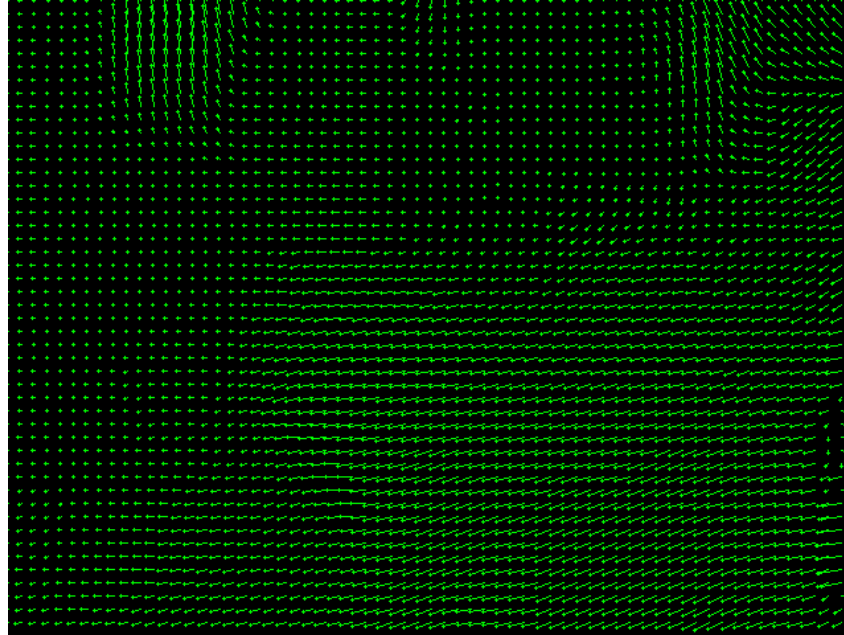
ps4-4-a-2

4a: Hierarchical LK (cont.)



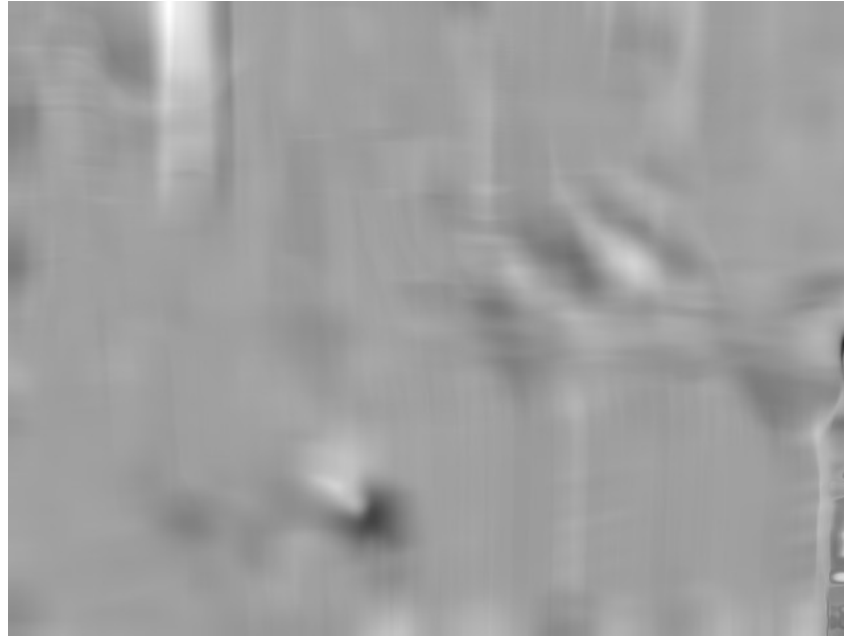
ps4-4-a-3

4b: Hierarchical LK (cont.)



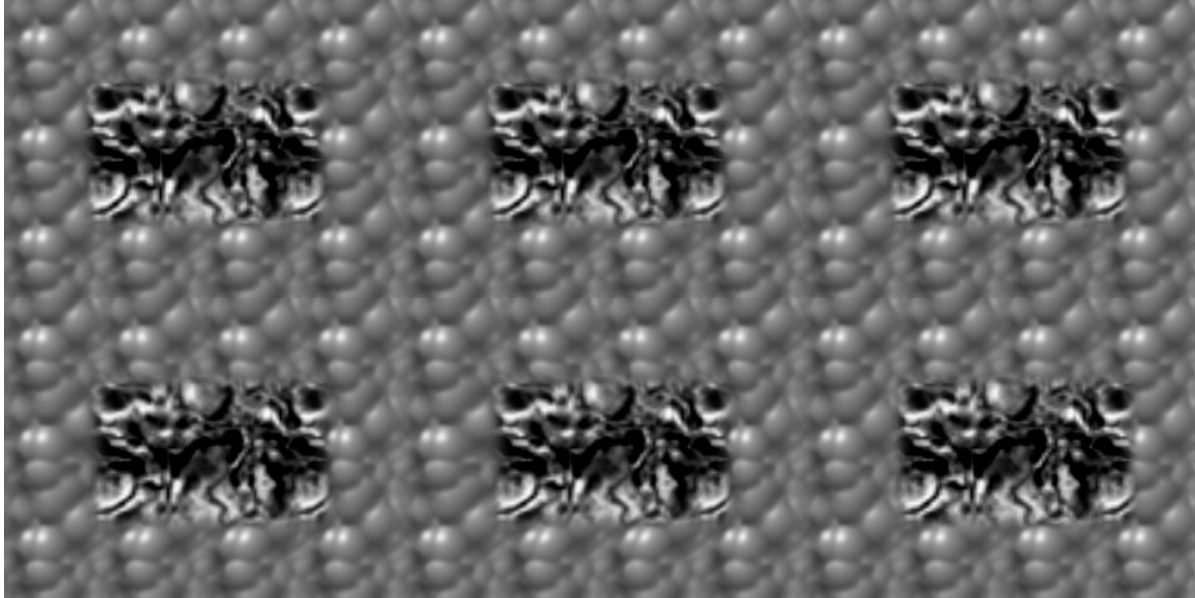
ps4-4-b-1

4b: Hierarchical LK (cont.)



ps4-4-b-2

5a: Frame Interpolation



ps4-5-a-1

5b: Frame Interpolation



ps4-5-b-1

5b: Frame Interpolation



ps4-5-b-2

6: Challenge Problem



ps4-6-a-1

6: Challenge Problem (cont.)



ps4-6-a-2

6: Challenge Problem (cont.)

Video link:

<https://www.dropbox.com/s/0sw8rivo53lfufm/ps4-6-video.mp4?dl=0>