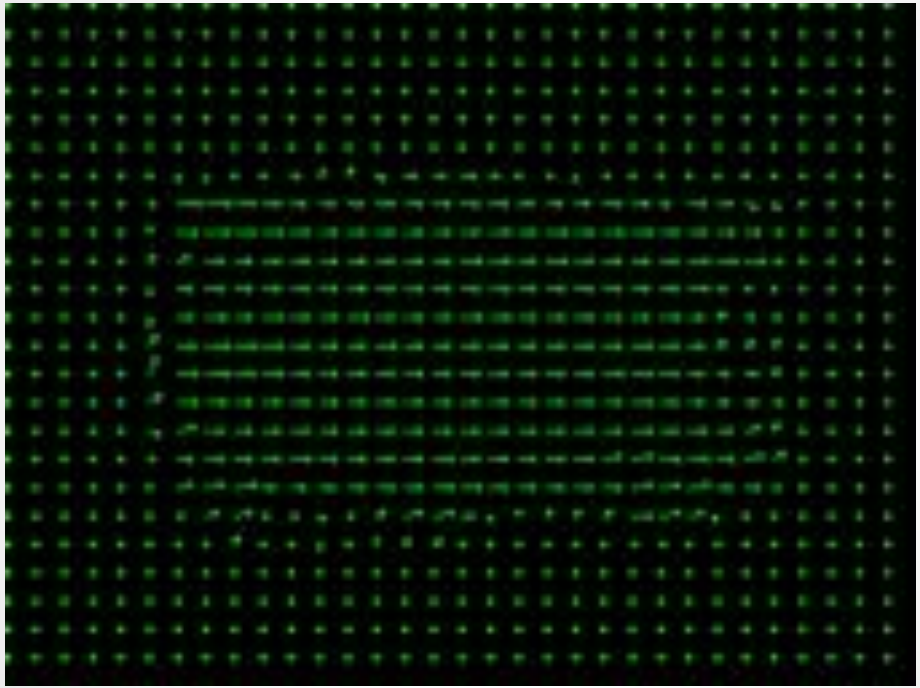
Computer Vision
Fall 2018
Problem Set #4

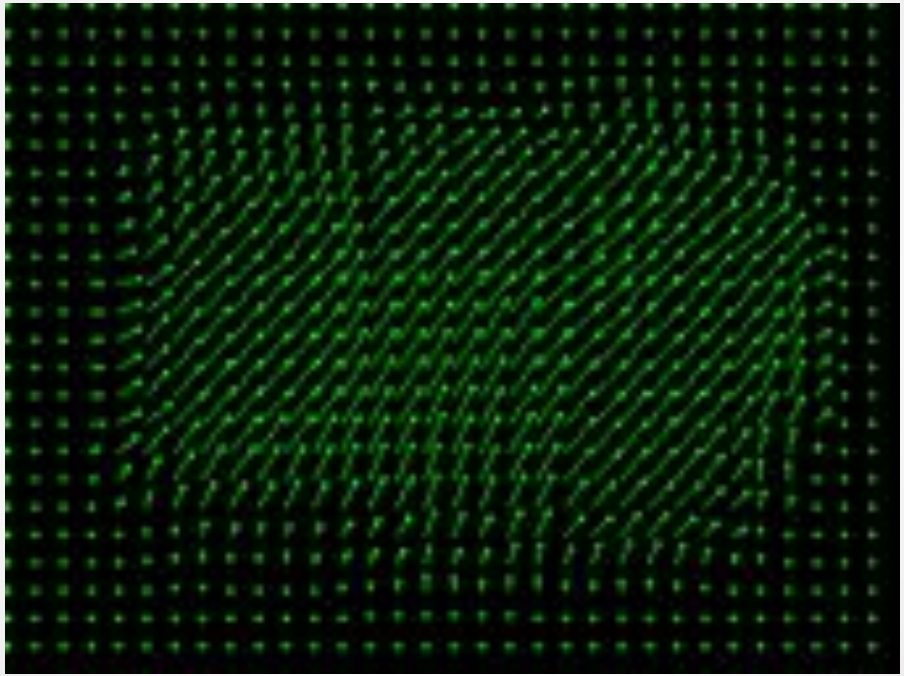
Junle Lu
junle.lu@gatech.edu

1a: Base Shift0 and ShiftR2



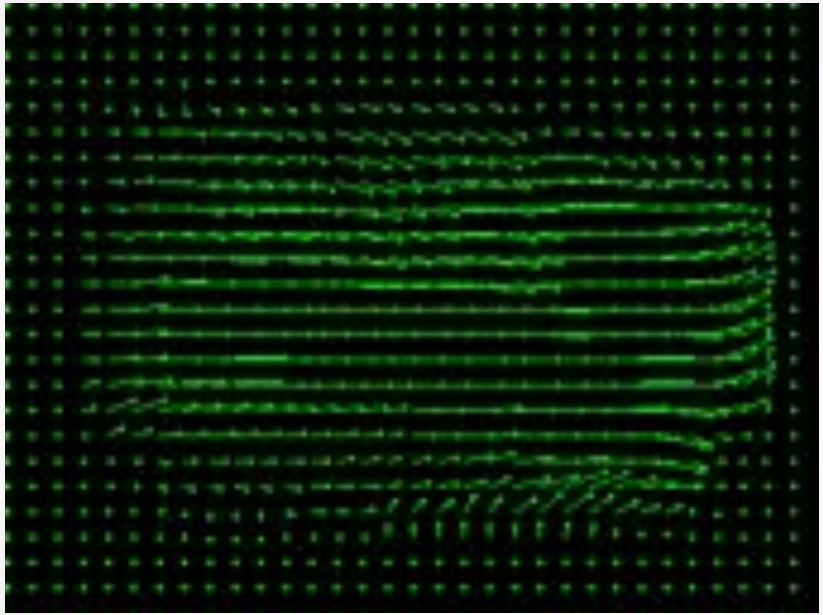
ps4-1-a-1.png

1a: Base Shift0 and ShiftR5U5



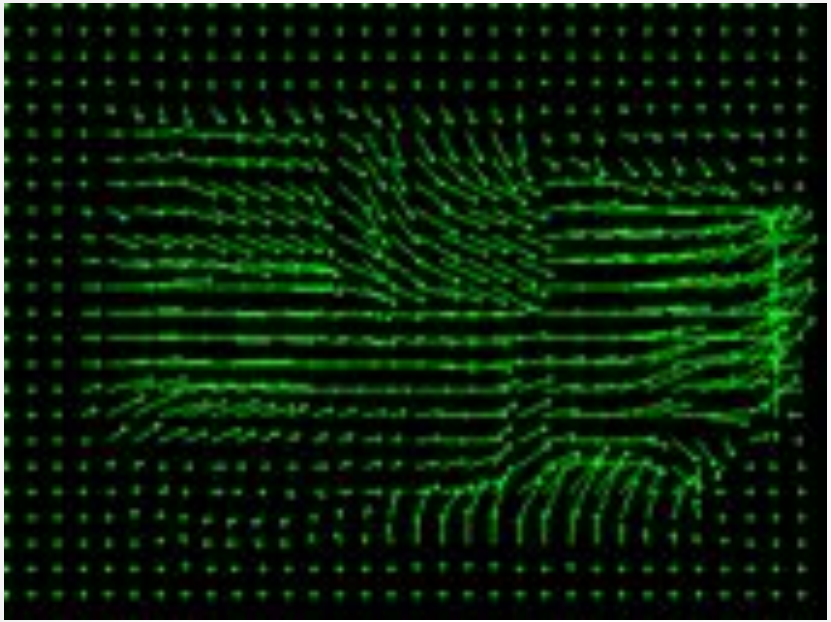
ps4-1-a-2.png

1b: Base Shift0 and ShiftR10



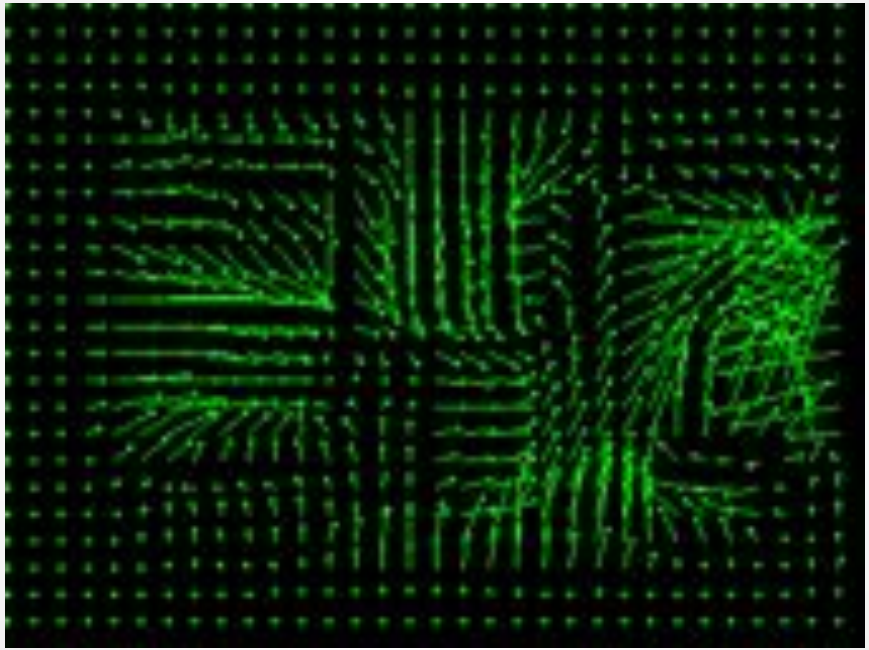
ps4-1-b-1.png

1b: Base Shift0 and ShiftR20



ps4-1-b-2.png

1b: Base Shift0 and ShiftR40

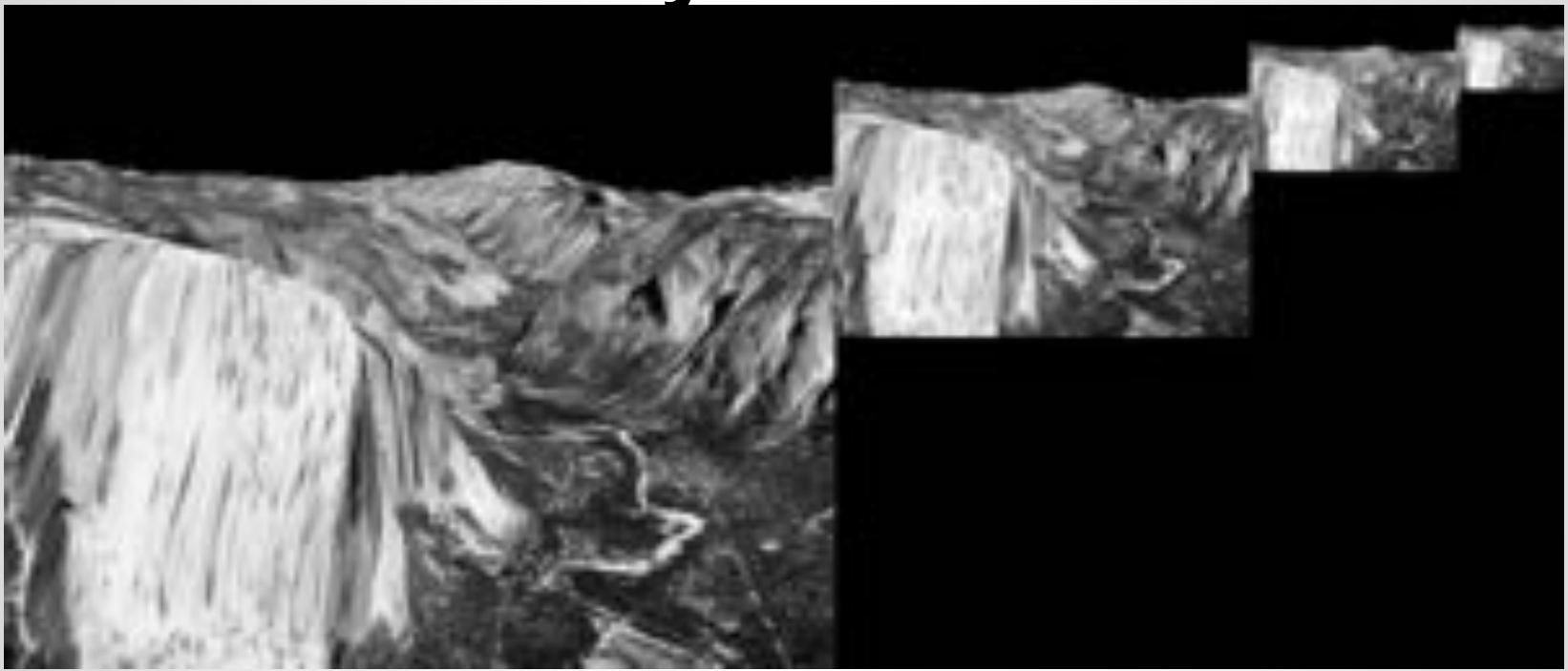


ps4-1-b-3.png

1b: Text Response

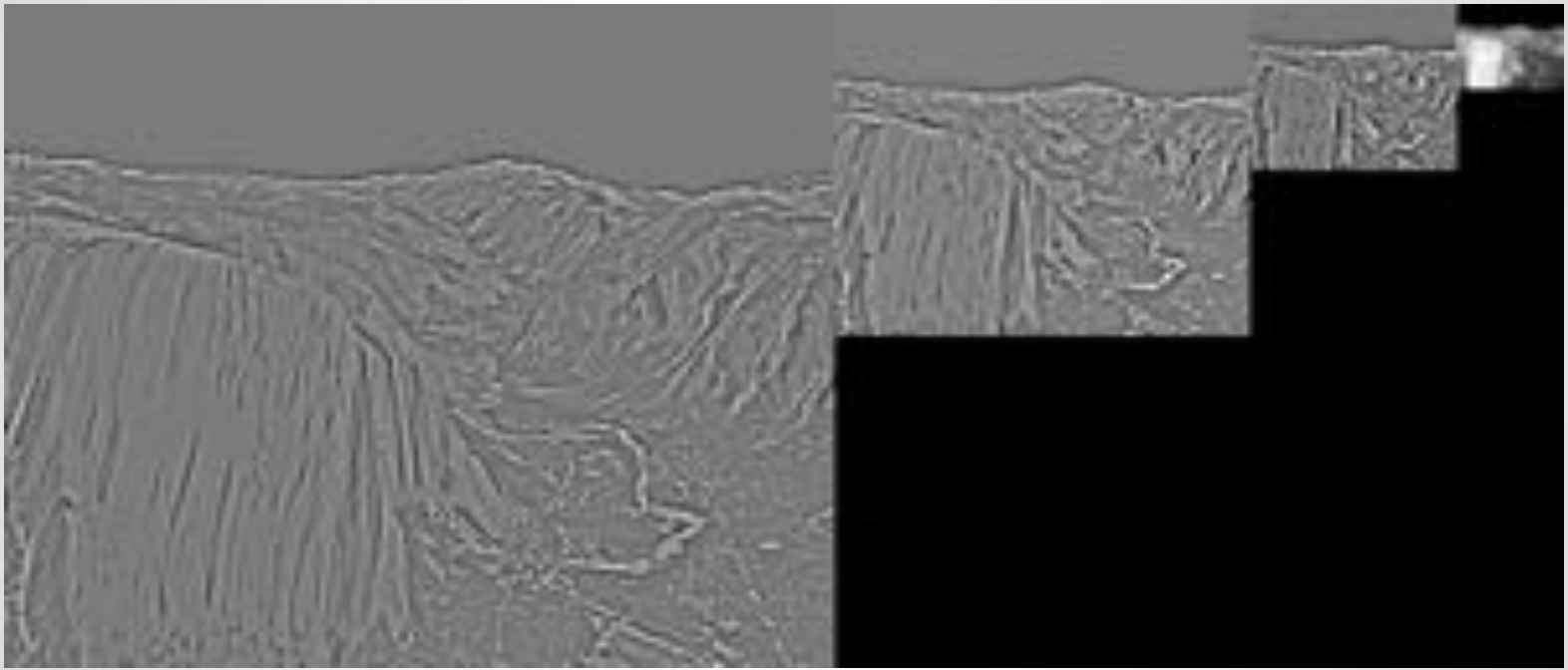
- Does LK still work? Does it fall apart on any of the pairs? Try using different parameters to get results closer to the ones above. Describe your results and what you tried.
- Ans: LK did not work well at first, especially on SHIFTR40. I tried many different ‘ksize’ value for the uniform filter (cv2.blur) to make them to work.

2a: Gaussian Pyramid



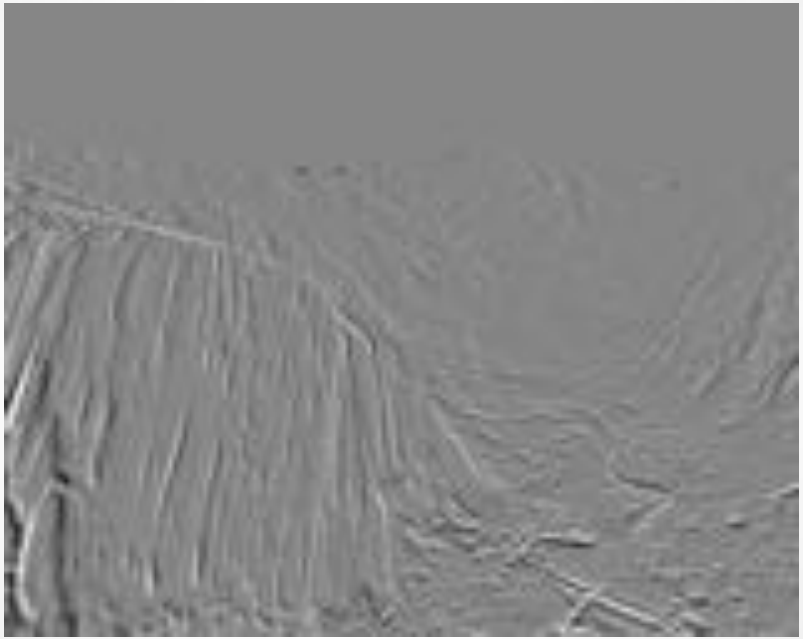
ps4-2-a-1.png

2b: Laplacian Pyramid



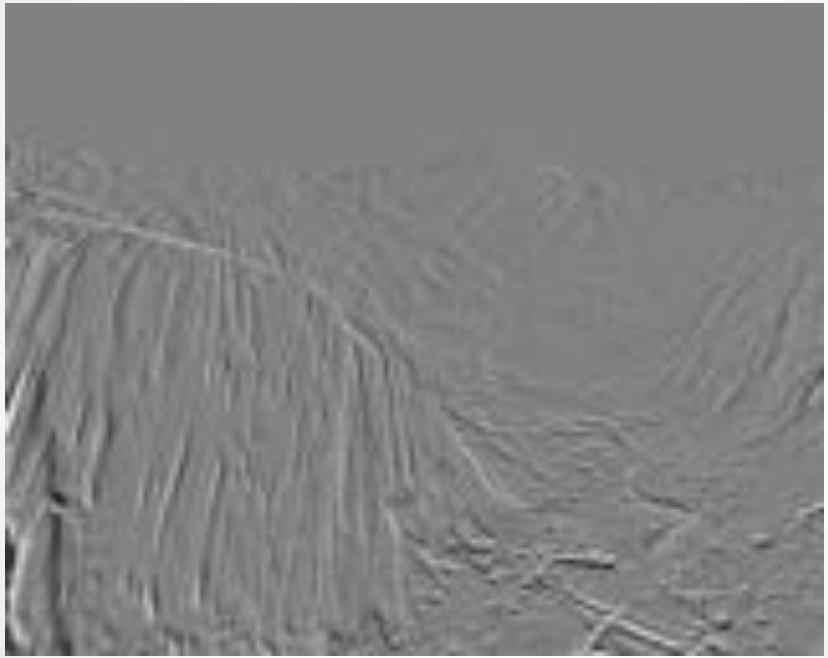
Laplacian Pyramid Image **- ps4-2-b-1.png**

3a: Difference images



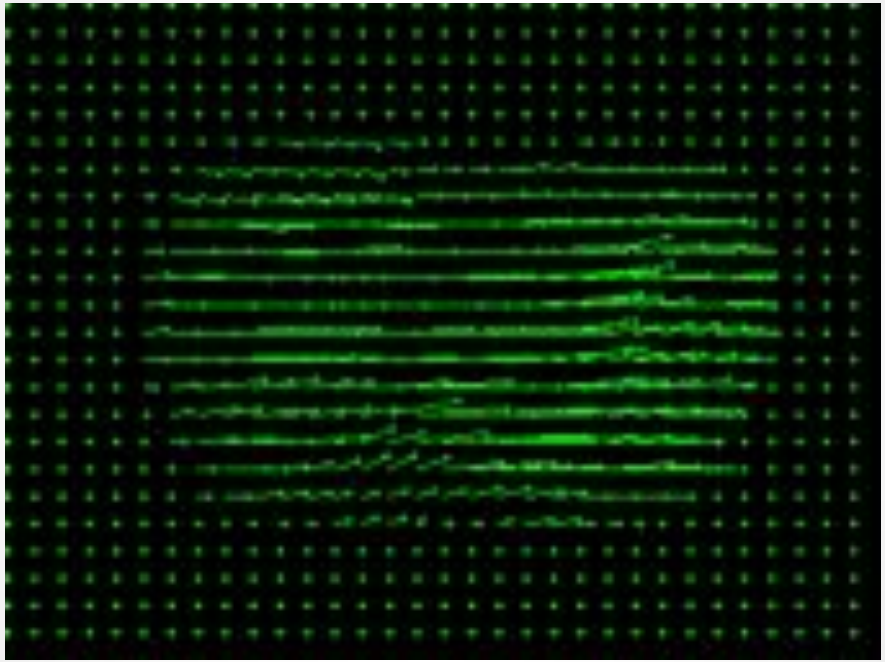
ps4-3-a-1.png

3a: Difference images (cont.)



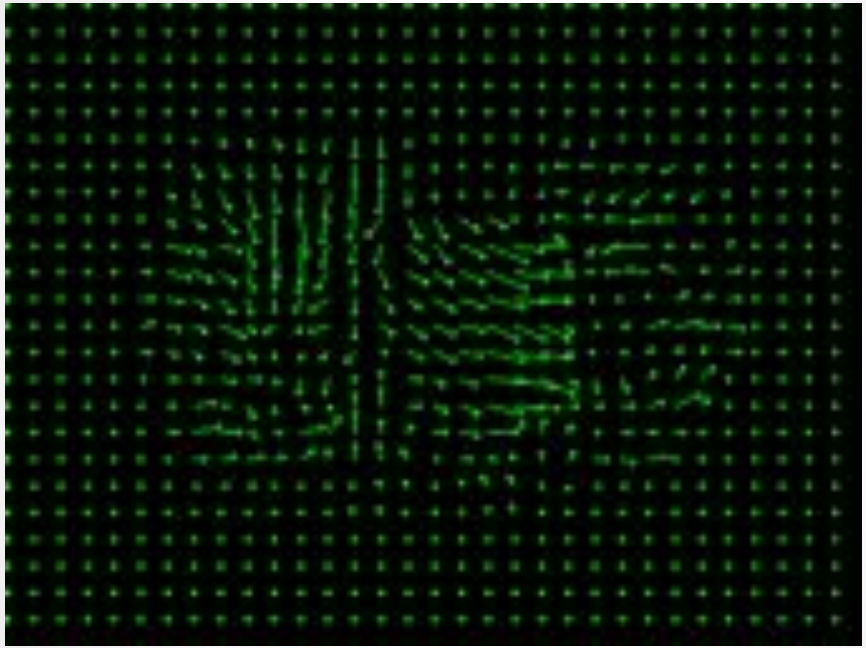
ps4-3-a-2.png

4a: Hierarchical LK



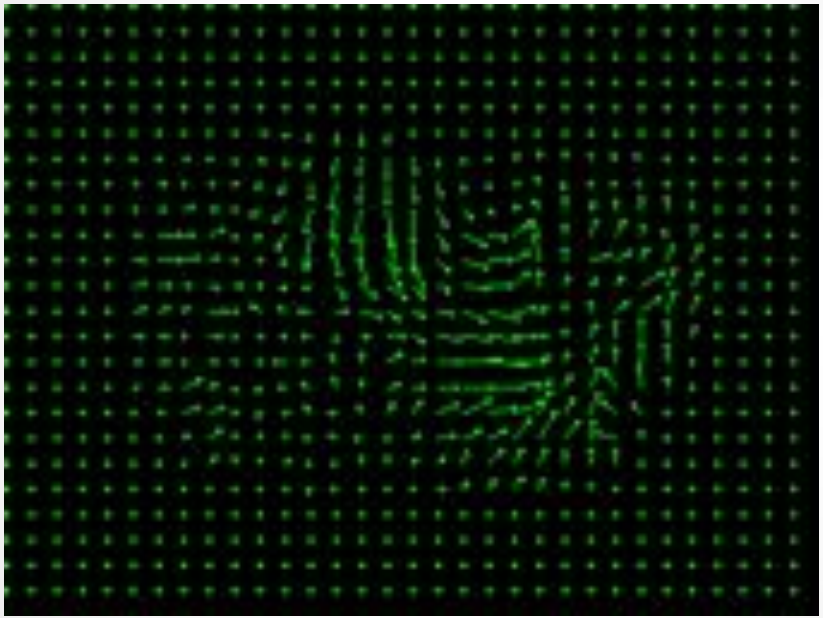
ps4-4-a-1.png

4a: Hierarchical LK (cont.)



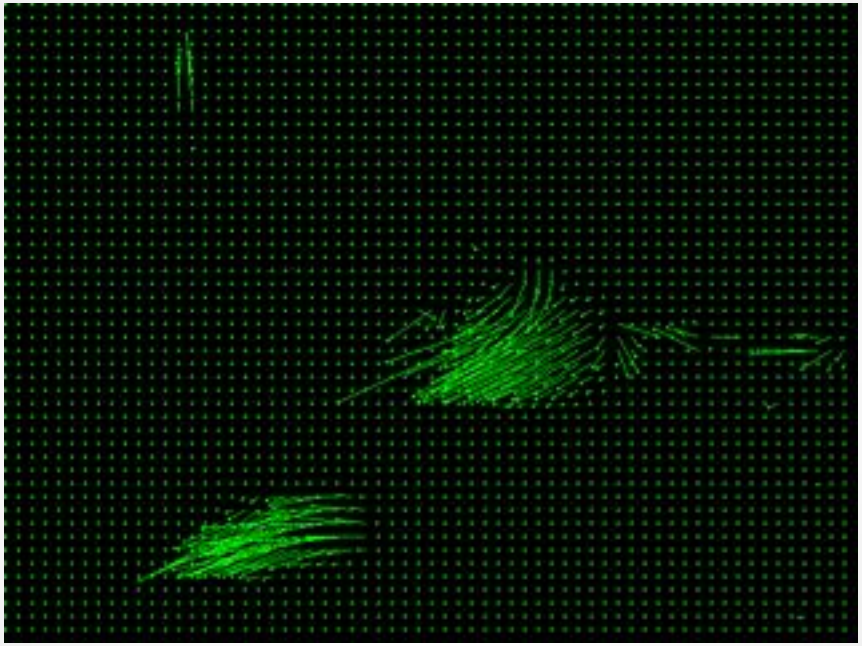
ps4-4-a-2.png

4a: Hierarchical LK (cont.)



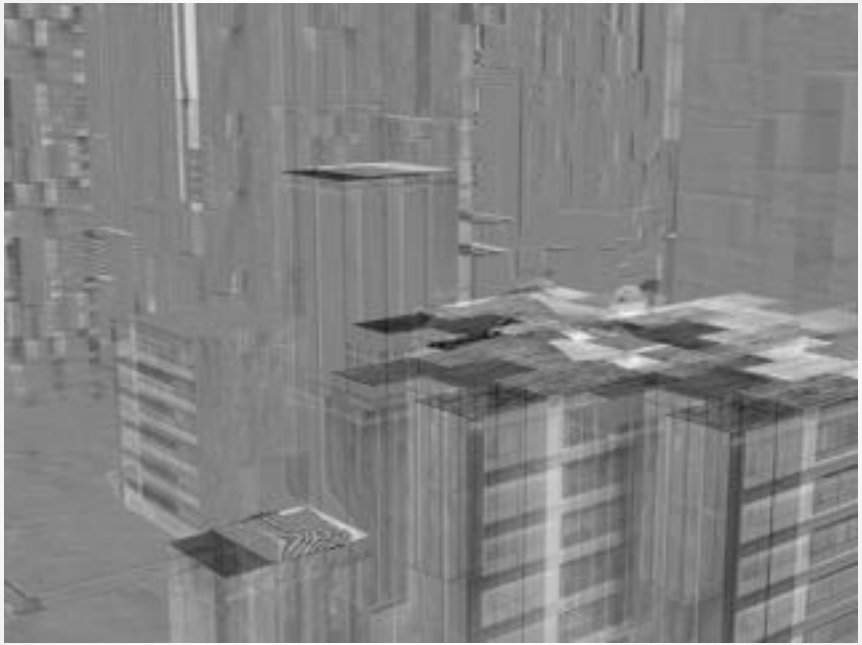
ps4-4-a-3.png

4b: Hierarchical LK (cont.)



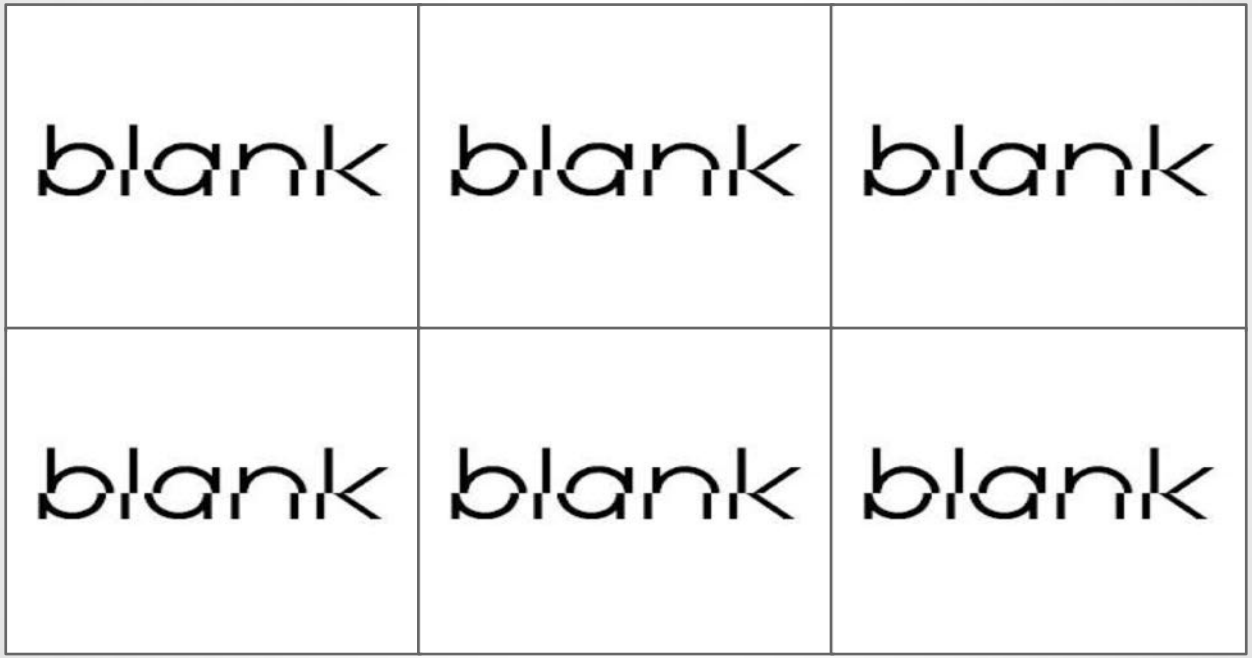
ps4-4-b-1.png

4b: Hierarchical LK (cont.)



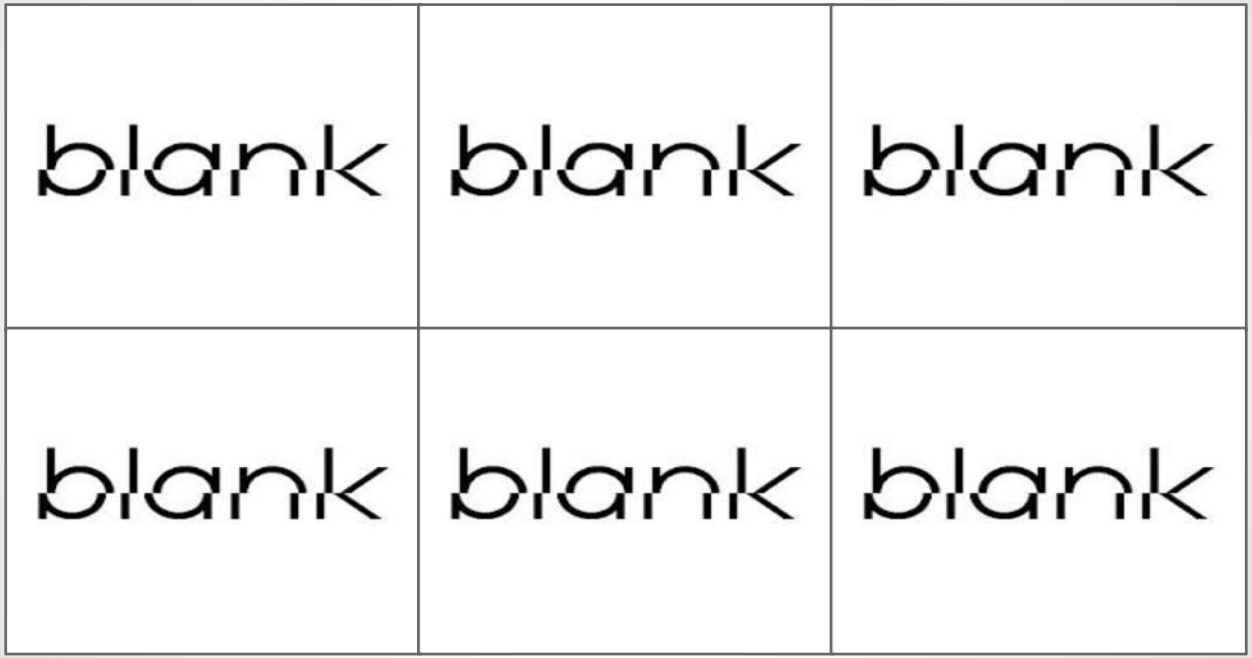
ps4-4-b-2.png

5a: Frame Interpolation



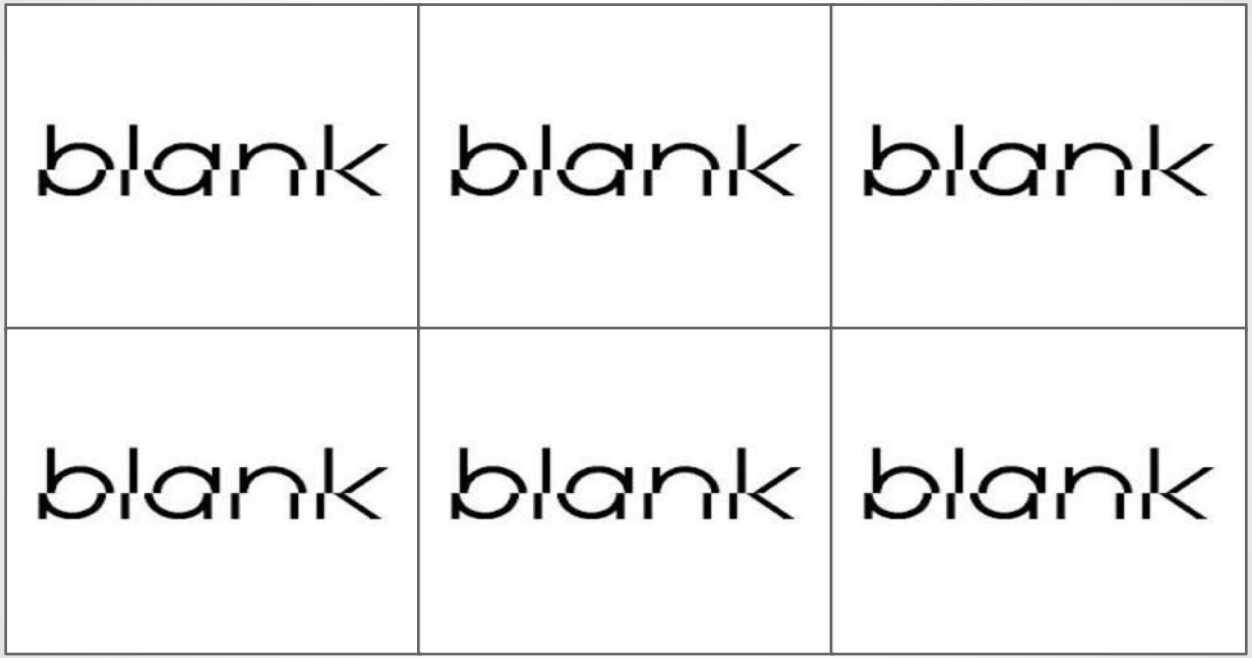
ps4-5-a-1.png

5b: Frame Interpolation



ps4-5-b-1.png

5b: Frame Interpolation



ps4-5-b-2.png

6: Challenge Problem

ps4-6-a-1.png

6: Challenge Problem (cont.)

ps4-6-a-2.png

6: Challenge Problem (cont.)

Video Link

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