

Homework 6

Sylvia Wang

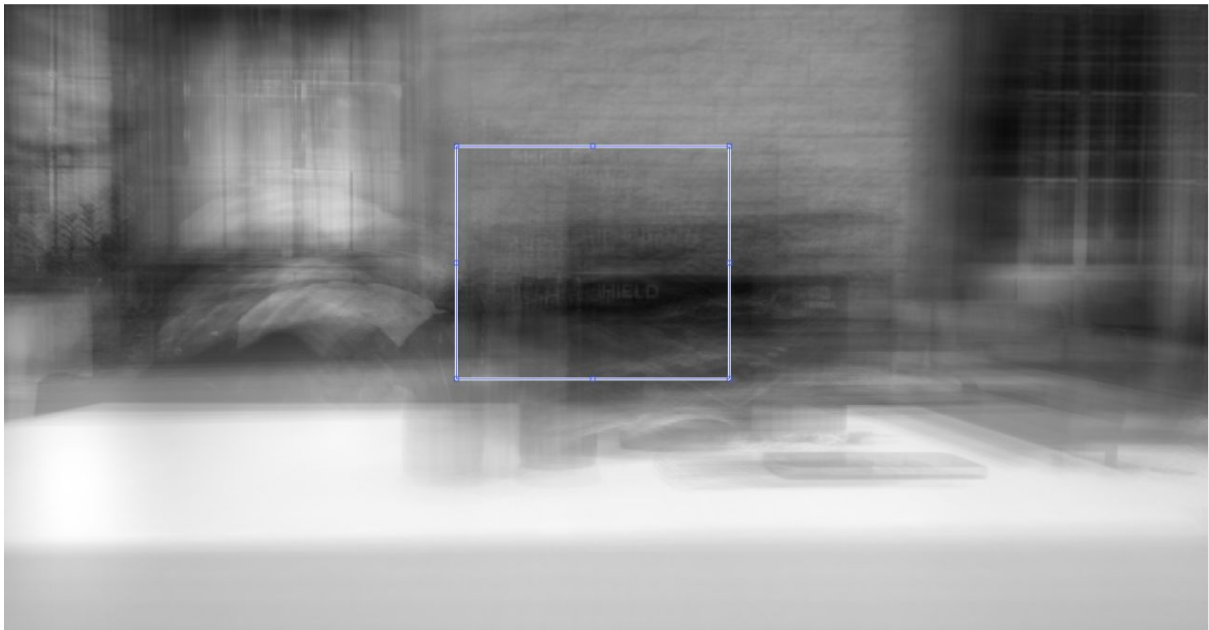
1. Capture an unstructured light field.

2. Register the frames of video using template matching

- Convert each frame to grayscale
- Take one frame from 100 frames
- Register the frame of video

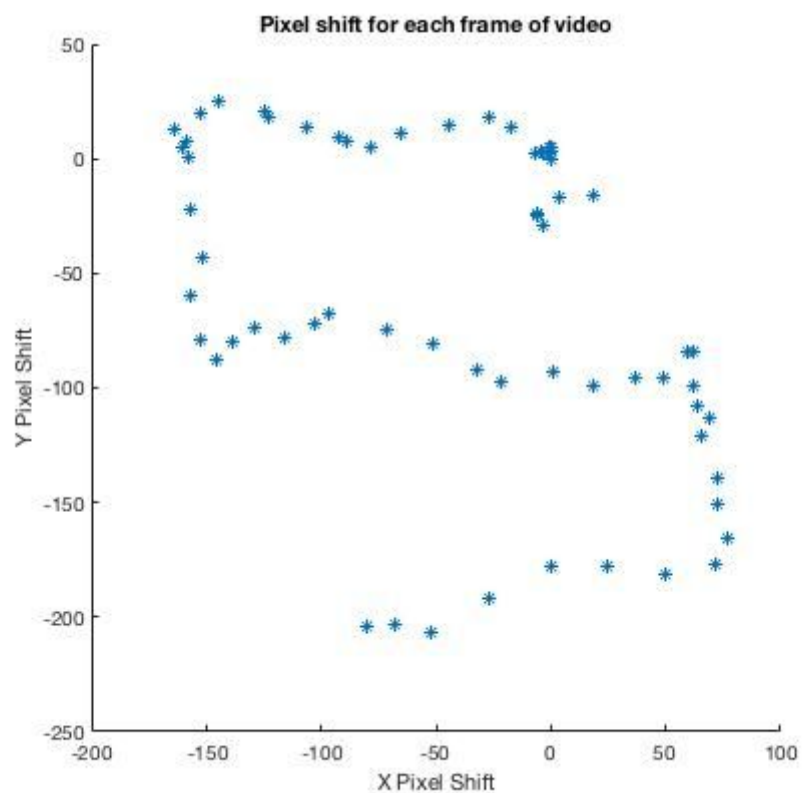


(The template used to register the frame of video)



(the window for template matching)

- should be larger than the template
- Compute the normalized correlation function
- Show a plot of the pixel shift for each frame



3. Create a synthetic aperture photograph

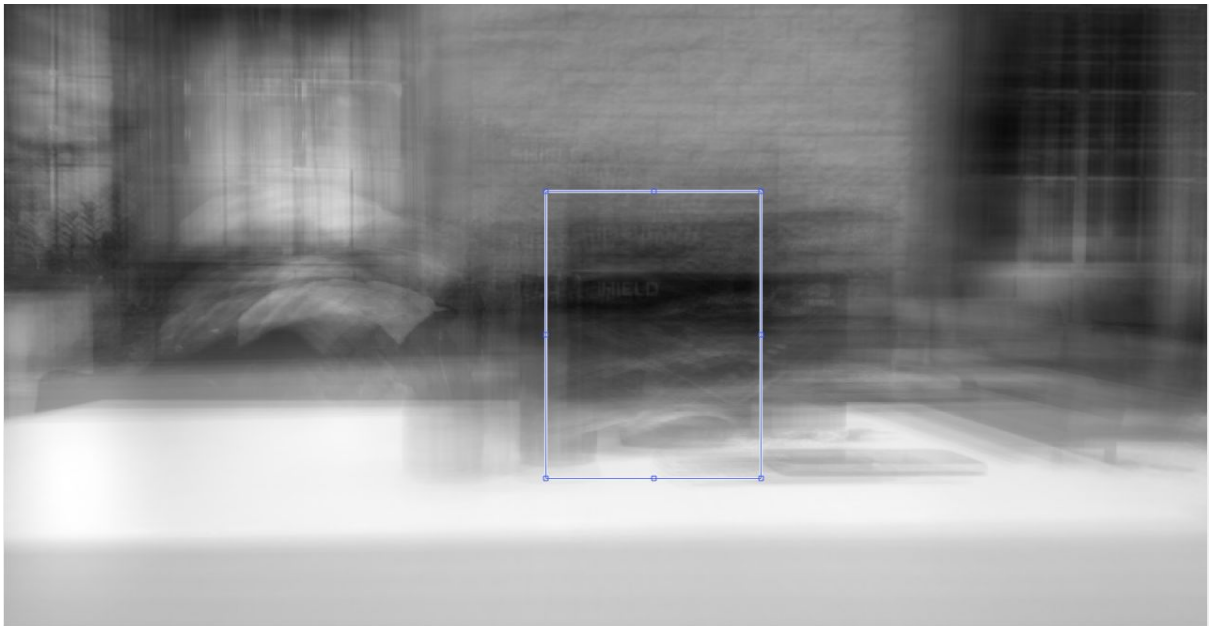


A synthetic aperture using a template from the text

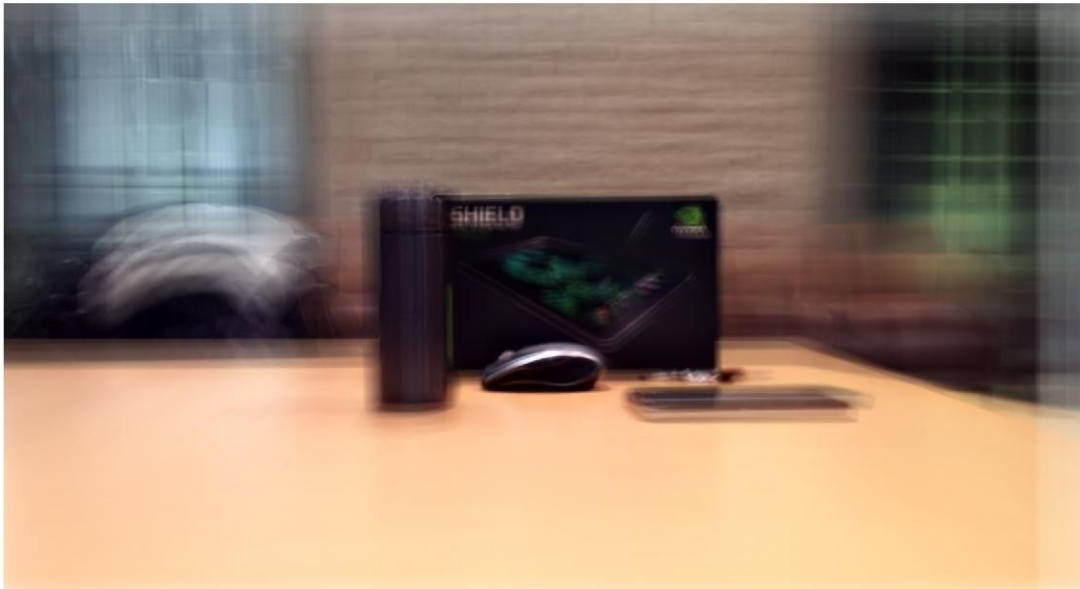
4. Refocus on a new object



(the template)



(the window)

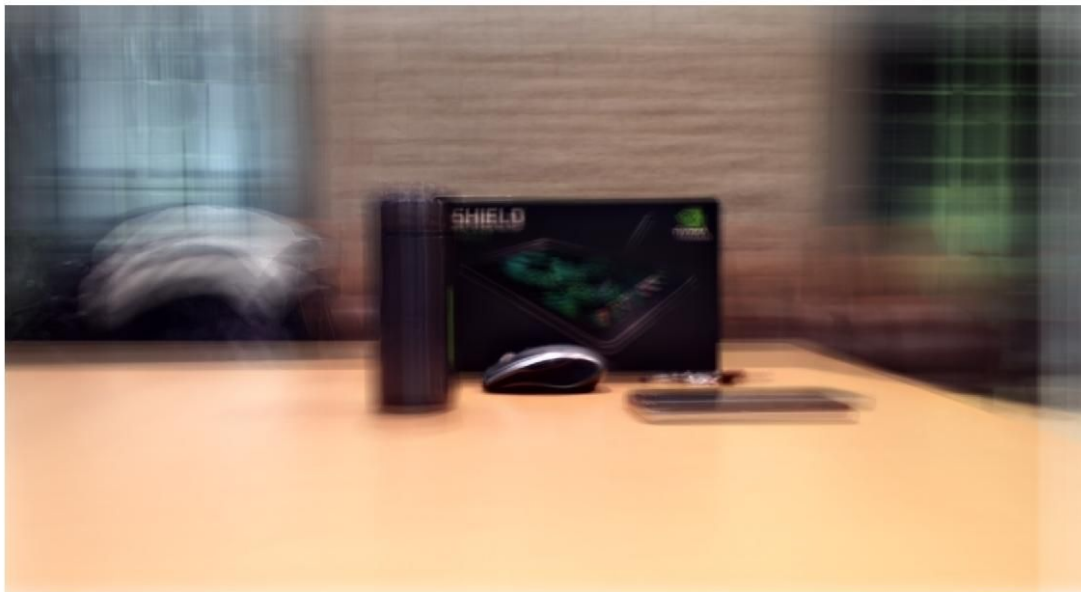


A synthetic aperture using a template from the mouse

Comparison:



A synthetic aperture using a template from the text. The text is more clear.



A synthetic aperture using a template from the mouse. The mouse is more clear.

Problems encountered:

Because the background is far from the objects, so it is really fuzzy. The camera lens should be closer but that doesn't change the result of the synthetic aperture.