Computer Vision
Fall 2021
Problem Set #3

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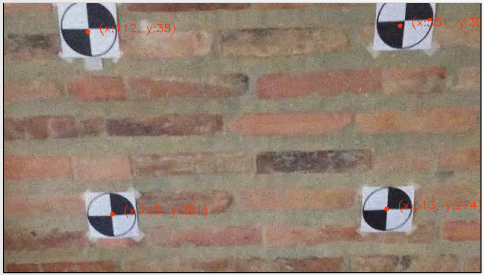
3: Projective Geometry

Report what wrapping technique you have used and comment on what led you to choosing this method.:

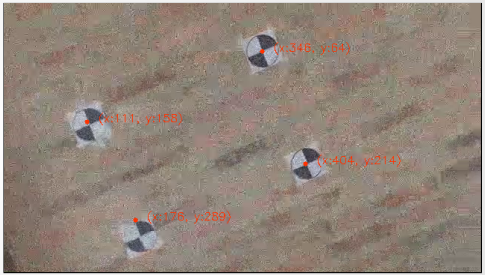
I used the backwards wrapping technique because the forward wrapping technique results in image artifacts. The reason for forward wrapping causing distortion is that you are projecting from a smaller image onto a larger image plane, so the pixels will be spread out, causing gaps in the resulting image.

In backwards warping, you have a 1-to-1 correspondence from the larger image plane to the smaller image plane. This means there is parity with the pixels (looping over the larger image plane and transferring pixels from the smaller image plane). Therefore, there will be no pixel separation in the resulting image.

4: Markers in Video



ps3-4-a-1

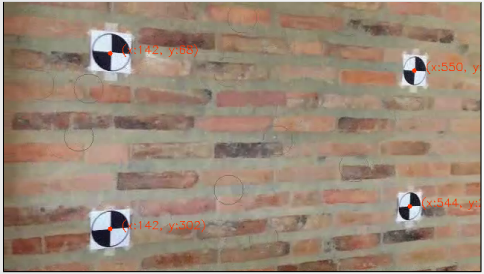


ps3-4-a-2

4: Markers in Video (cont.)

ps3-4-a-3

4: Markers in Video (cont.)



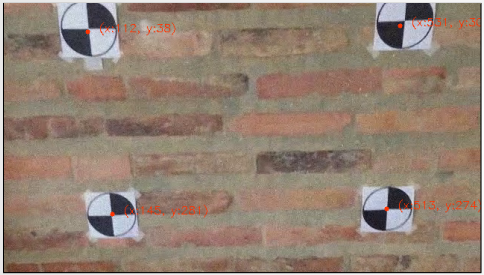
ps3-4-a-4

ps3-4-a-5

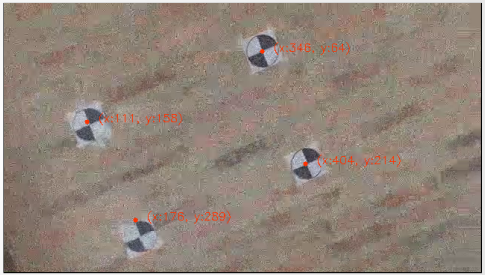
4: Markers in Video (cont.)

ps3-4-a-6

4: Markers in Video



ps3-4-a-1

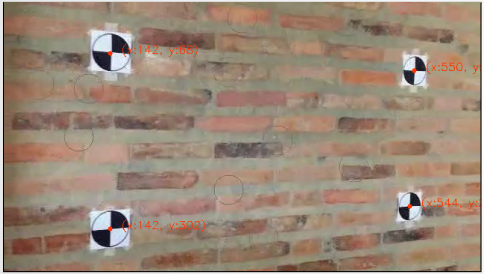


ps3-4-a-2

4: Markers in Video (cont.)

ps3-4-a-3

4: Markers in Video (cont.)



ps3-4-a-4

ps3-4-a-5

4: Markers in Video (cont.)

ps3-4-a-6

5: Markers in Video

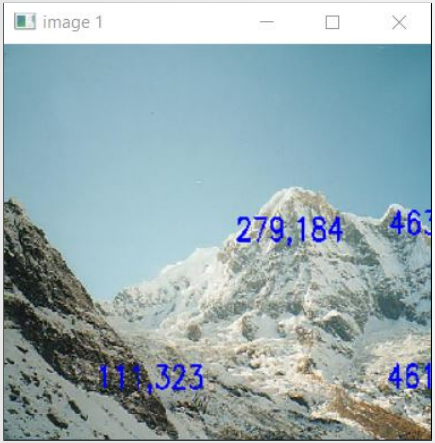
ps3-5-b-4

ps3-5-b-5

5: Markers in Video (cont.)

ps3-5-b-6

6: Manual Correspondence points



ps3-6-a-1

ps3-6-a-2

9: Image Stitching

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ps3-9-1	**ps3-9-2**

9: Image Stitching

Comment on the quality difference between the two outputs and how it relates to the importance of choosing the correct correspondence points for the image:

If your pdf is larger than 7MB

Please compress it using (or something similar):

https://smallpdf.com/compress-pdf

Verify that all images are still visible for grading.