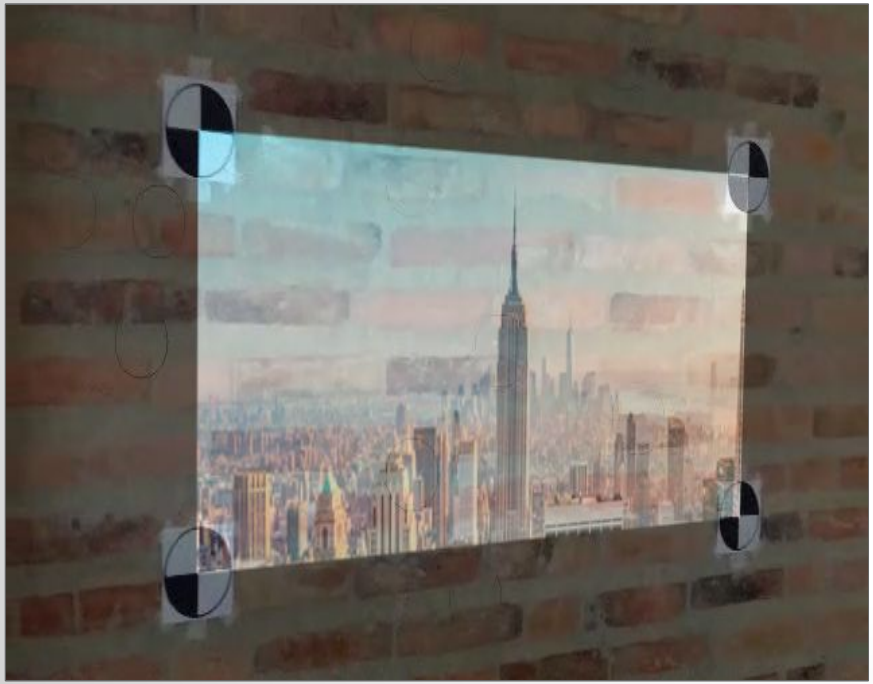
Computer Vision
Spring 2021
Problem Set #3

Martin Mathew
martin.mathew.2k11@gatech.edu

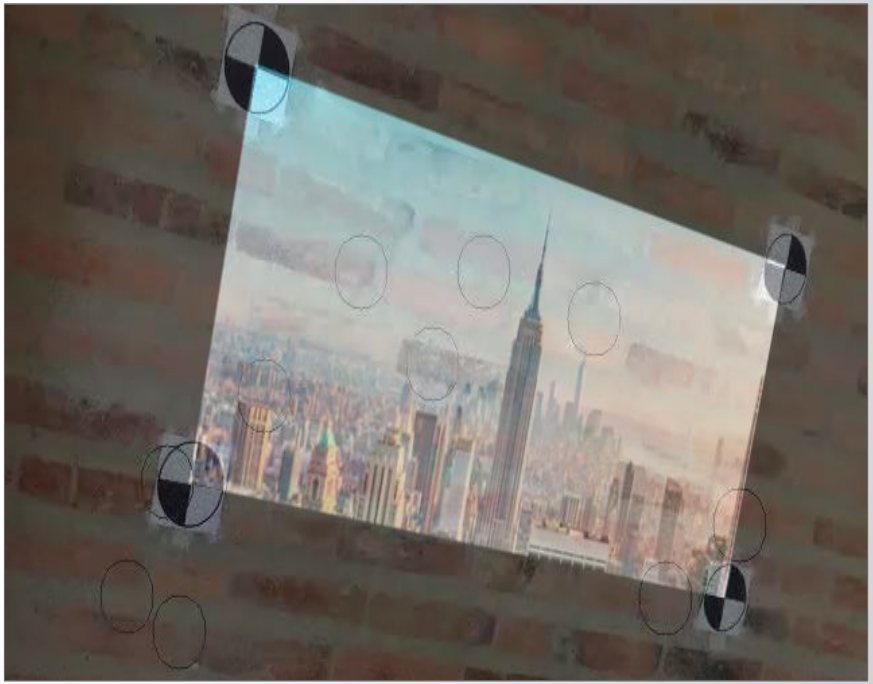
3: Projective Geometry

Report what wrapping technique you have used and comment on what led you to choosing this method.
Inverse Warping
In Inverse wrapping every destination coordinate is mapped to a source coordinates due to which there is a source point for each point in the destination image. In forward warping coordinates from the source image are mapped to destination image due to which its possible that few points in the destination image may not have any source coordinates mapped to it. Due to this image warped using forward technique has holes in it and is of poorer quality compared to the one with inverse warping

5: Markers in Video



ps3-5-b-4

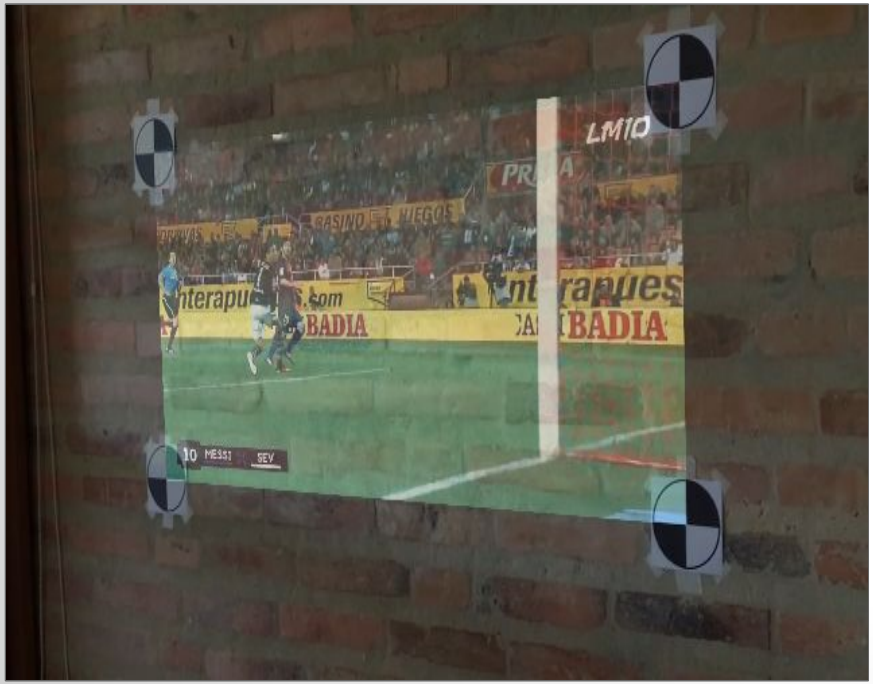


ps3-5-b-5

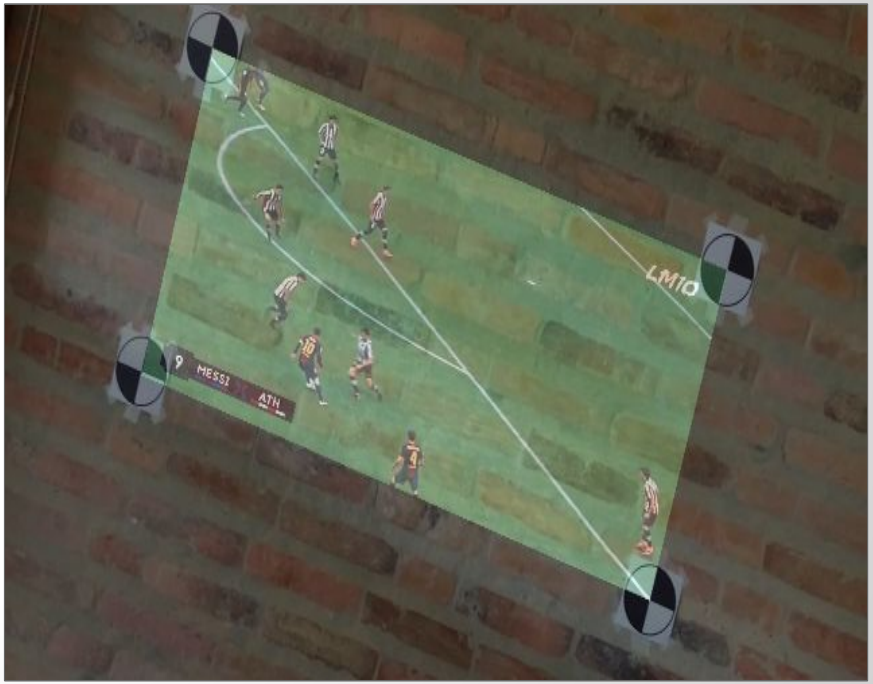
5: Markers in Video (cont.)

ps3-5-b-6

6: Video in Video

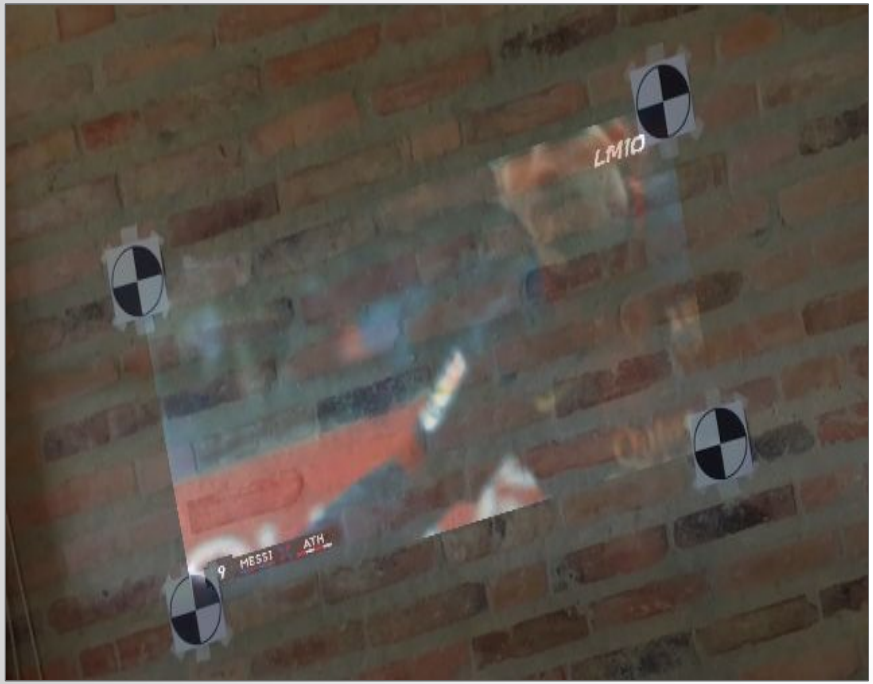


ps3-6-a-1



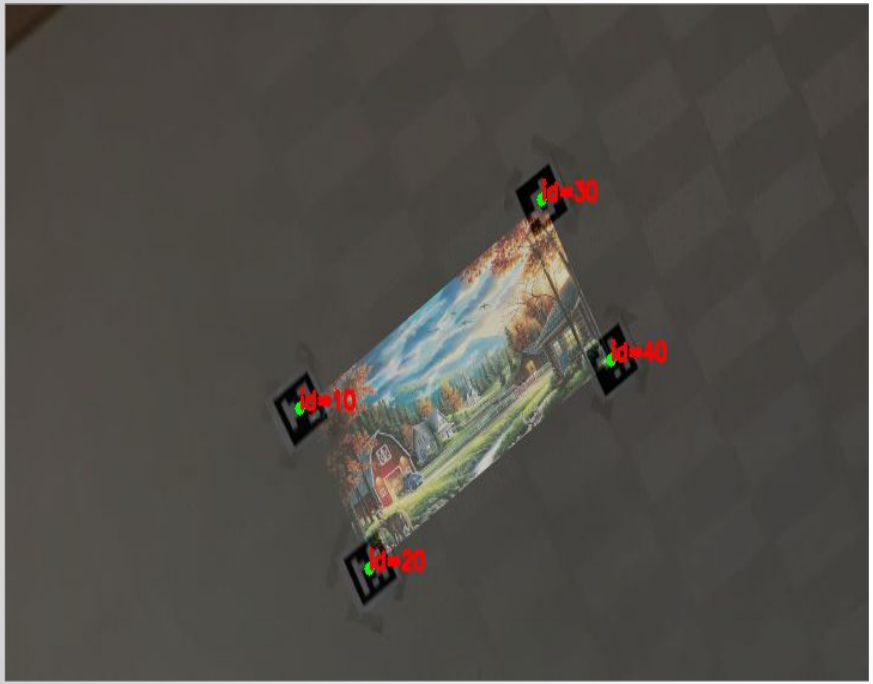
ps3-6-a-2

6: Video in Video (cont.)

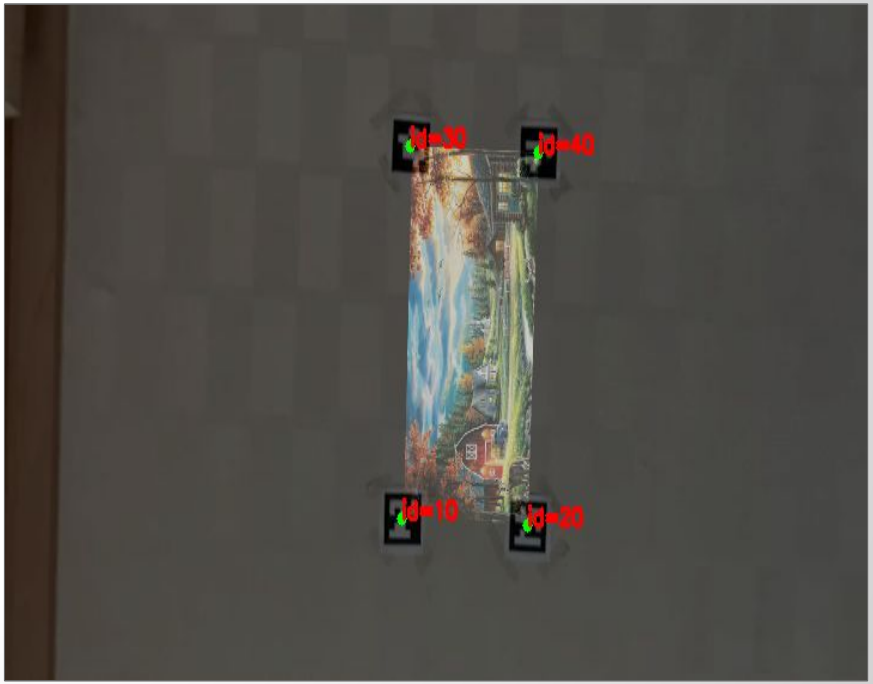


ps3-6-a-3

7: ArUco Marker

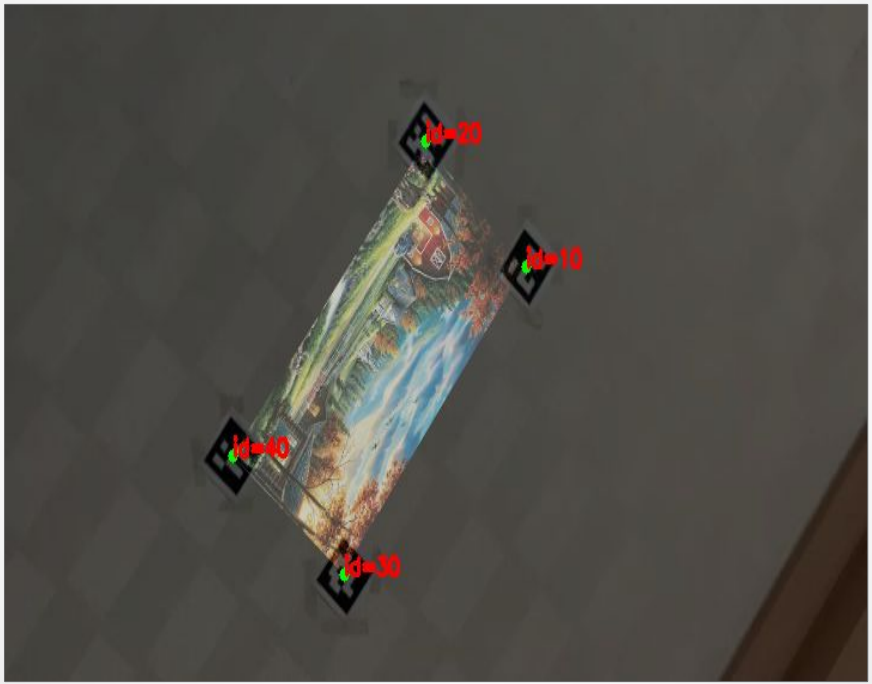


ps3-7-1



ps3-7-2

7: ArUco Marker (cont.)



ps3-7-3

Reference

How do I use OpenCV's remap function? (2017b, October 2). Stack Overflow.

https://stackoverflow.com/questions/46520123/how-do-i-use-opencvs-remap-function

Agarwal, S. (2020, January 27). *Homography - And how to calculate it? - all things about robotics and computer vision*. Medium.

https://medium.com/all-things-about-robotics-and-computer-vision/homography-and-how-to-calculate-it-8abf3a13ddc5

https://web.stanford.edu/class/cs231a/course_notes/03-epipolar-geometry.pdf