

# Pipeline for Stereoscopic stitching work

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1. Visualize the matches from superpoint+lightglue, learn the matches and points from the results;\
  1. Extract points and matches from results
2. Visualize the results from segmentation, learn the results and how to extract regions;\
  1. Extract semantic region mask from SAM2's results
  2. Make a class:Region to store region mask and points inside
3. Match points to semantic region, build class to save them;
  - 1.
4. Learn how to use points to controll image warping;\
5. Learn DLT/MDLT to estimate optimal homography;\
6. Learn DLT to solve energy minimization problem, write class to realize with Homography, Disparity, smoothness;\
7. Stereo Stitching;\

## Using StereoscoPy to Generate Red-Cyan stereoscopic pairs

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install: pip install stereoscopy

CIL: StereoscoPy -S 5 0 -a -m color --cs red-cyan --lc rgb .\left\_repaired.png .\right\_repaired.png red\_cyan.jpg  
-A: autoalignment(should be off)  
-a: anaglyph output  
-S: xy shift for left/right image  
-m: method  
-cs: color scheme (should be red-cyan)  
--lc: luma coding (should be rgb)

Generate StereoPairs from left and right: ffmpeg -i .\left\_repaired.png -i .\right\_repaired.png -filter\_complex "[0:v]scale=512:256[img1];[img1][1:v]hstack" stereo.jpg ffmpeg -loop 1 -i .\stereo.jpg -c:v libx264 -t 60 -pix\_fmt yuv420p stereo\_output.mp4