3D COMPUTER VISION
ASSIGNMENT -4 REPORT

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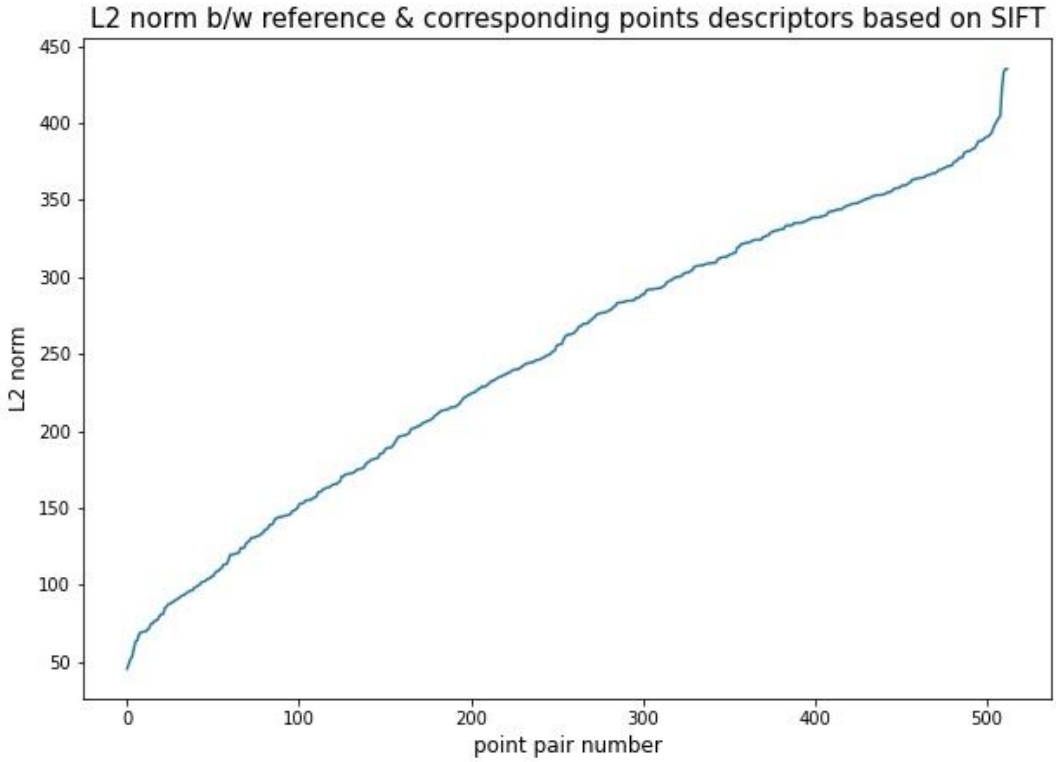
The assignment uses the SIFT algorithm to find the point correspondences. The main drawback is that only a few point correspondences' descriptors' L2-norm is small. Other point correspondences have a high L2-norm as shown in the figure.



Therefore, it is tough to find the best fundamental matrix for the 2 images.

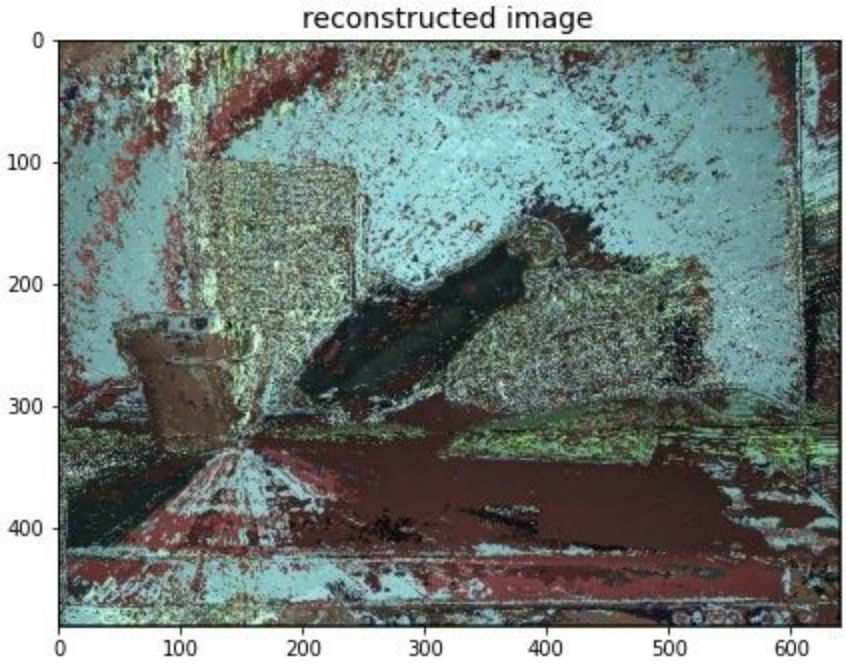
I downloaded a stereo dataset containing 5 stereo pair images[1]. Each image is of size (480,640)

Example of the reconstructed image is shown here:

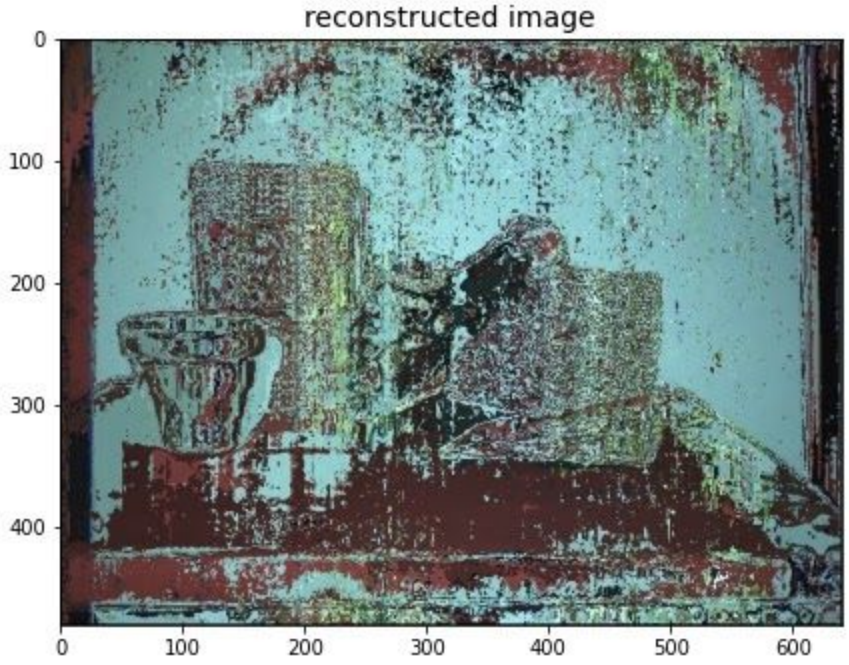
Reference Image:

Corresponding image:

Reconstructed Image:



Inbuilt function reconstruction:



The inbuilt function code has been taken from [2]
It is not a reasonably good image since the number of good point correspondences is very less.
The main observation from the results: The objects with intricate patterns or complex designs fail to get reconstructed.

NOTE: I have executed the inbuilt function only on the scene2 images since it was computationally intensive.

References:
[1]https://vision.deis.unibo.it/fede/ds-stereo-lab.html
[2]https://opencv-python-tutroals.readthedocs.io/en/latest/py_tutorials/py_calib3d/py_epipolar_geometry/py_epipolar_geometry.html