Assignment 6

Task1

a) The essential and fundamental matrices are 3×3 matrices that encode the epipolar geometry of two views (Relate corresponding points in two images)

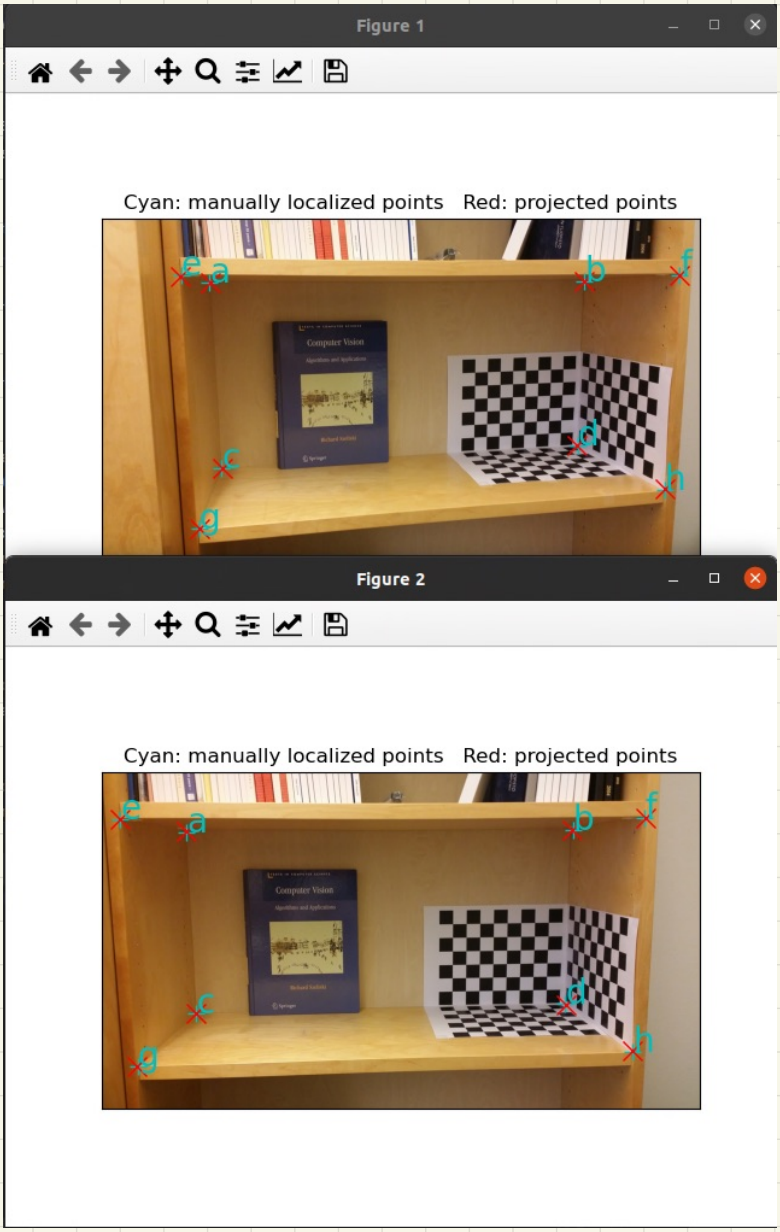
Difference
- EM: points are normalized image coordinates (by F_x and F_y, the origin is at the optical center)
- FM: points are pixel coordinates

b) To derive EM from FM we need camera parameters (intrinsic & extrinsic parameters)

c) FM has 7 degrees of freedom. Initially, there are 9 DoF as FM composes 9 parameters
- homogenous coordinates → remove 1 DoF
- Matrix of rank 2 → FM is singular → Determinant is 0 → remove 1 DoF

d) EM has 5 DoF as the matrix is similar to FM, plussed 2 camera parameters.

Task2



Task3

```
/home/trung/anaconda3/envs/CV_2020/bin/python /home/trung/PycharmProjects/CV_2020/Assignment6/Python/triangulat
ion_task.py
Picture width: 159.72 mm
Picture height: 74.87 mm

Process finished with exit code 0
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