Exercise 12 for MA-INF 2201 Computer Vision WS19/20
20.01.2020
Submission on 25.01.2020

1. The `Hotel` dataset is provided in the *data* folder with images and 2D feature points. Visualize the 2D features in each view by creating a small animation using *matplotlib*. For each view plot the corresponding features and the centroid.
   (2 Points)

2. Implement the Tomasi-Kanade Structure-from-Motion algorithm as presented in the lecture and apply it to the `Hotel` dataset.

   (a) Implement the Algorithm and show the results as a 3D *matplotlib* plot.
   (8 Points)

   (b) Eliminate the affine ambiguity, update the motion and shape matrices and show the results as a 3D *matplotlib* plot
   (6 Points)

   (c) Depict the reprojection error of the shape by overlaying the inital 2D features and the 2D projection of the 3D shape vertices on each frame.
   (4 Points)

   (18 Points)