Computer Vision & Pattern Recognition
Assignment 6

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Exercise 1

In order to filter the video, we have computed the distance between the reference frame F_0 and each frame of the video F_i in the requested interval of time. Since the dominant color of the reference frame F_i is green, we decided to compute the distance as the average amount of green between F_0 and F_i. In the end, we got in total 1040 frames, that were merged together in the attached file (`filtered.mp4`). All the code and results for this exercise are in the attached Python script (`ex1.py, functions.py`)

Exercise 2

We started by detecting the interesting points in order to perform DLT (we automatically detected the inner corners of the snooker table and manually detected the outer corners and the non-red balls). Once we got the 2D points, we mapped them to their 3D points counterpart using the official dimensions of the snooker table. Finally, we applied DLT algorithm to compute the camera position $C =$ `[-0.12969059, -2.19018141, 0.01820702]`.
All the code and results for this exercise are in the attached file (`DLT.py, find_corners.py`).