Assignment #2
Due on Friday, November 17, 2023 by 23h59.

Send code and reports to shaifali.parashar@gmail.com

A. Computing Vanishing Points

Get a Rubik's cube and take several pictures. You can also download them from the internet. You are going to compute vanishing points on all of them to find the answer to the following questions:

1. What is the minimum and maximum number of finite vanishing points that can be found from all possible images of a Rubik's cube? Explain.
2. Is there a relation between number of visible faces and vanishing points? Explain with reasoning and experiments.
3. Can you find 4 vanishing points in Rubik's cube images? If yes, demonstrate with an image. If no, explain your reasoning.
4. Can you find a configuration with at least one vanishing point outside the image? If yes, demonstrate with an image. If no, explain your reasoning.

B. Fundamental Matrix Estimation

Take two pictures of the same configuration of Rubik's cube, estimate Fundamental Matrix.

1. Display the epipolar lines. Comment on how can you interpret the accuracy of estimated matrix from the visual results.
2. Normalize the data and recompute the fundamental matrix. Does it improve the accuracy? Explain your reasoning.

Note: Do not use an existing function to evaluate vanishing points or fundamental matrix.