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Neptun ID: LUM2CE

Documentation for line detection

Notes:

1- The number of iterations is an input of the program as it was asked in the problem.
2- The number of supporting points was mentioned to be 200. However, I did not obtain good results with 200 supporting points and I tried much bigger numbers like 2000 or 1800 in some cases.

The number of supporting points is also an input of the program.

3- Output files are included and the folder of each output is named according to the number of the supporting points and number of iterations that was initiated in the program.
4- The program had some data format issues with .jpg image format. Consequently all images were converted from jpg to .png via FormatFactory software.

Overall workflow of the code:

5- First we load the image and use Canny edge detector to detect edges in the image. Then we feed the counter obtained from Canny to the FitLineRANSAC method to robustly fit lines to the points on the contour image.
6- We plot the lines which have more supporting points than the input number of supporting points .
7- We finally write the result images (both the result image containing fitted lines and the obtained contour image).
8- Observations:

As the contour image has so many points, there RANSAC algorithm detects some lines with enough supporting points although the line is not an edge in the real picture.