HW2

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CS 6320 - 3D Computer Vision
Due: 11:59 PM on 02/17/2017

Please submit a zip file containing a PDF document (solutions to the problems) and the two programs (Matlab, Python, and C++ programs will be allowed). You will show a demo to the TA to get the grades.

1. Write a program to compute 3 dominant vanishing points from a given image. Vanishing points are points where parallel lines meet. Matlab code for line detection is available here:

   /urlhttp://www.peterkovesi.com/matlabfns/

   C++ users may use LSD:

   /urlhttps://github.com/theWorldCreator/LSD

   You are given two images to test your program. Use RANSAC to identify the 2 to 3 dominant vanishing points. Note that the vanishing points may be outside the image. Please report the computed vanishing points and show the final inlier lines (on an image) for each vanishing point in the PDF document, and submit the source code.

2. Write a program to compute the fundamental matrix between a given pair of images. Matlab code for SIFT descriptor matching is available in `http://www.cs.ubc.ca/~lowe/keypoints/`. You can also use OpenCV libraries for SIFT descriptor matching. Use RANSAC to fit the fundamental matrix. You are given two pairs of images to test your code. Please report the Fundamental matrices and show the final inlier correspondences (on an image) in the PDF document, and submit the source code.