Homework 4

Due October 12, 2006

Using the RANSAC algorithm for robust estimation, extend Homework 3 to automatically compute the homography between a pair of images of the same scene. Your implementation should closely follow the first three steps outlined in Algorithm 4.6 on page 123 of the Hartley & Zisserman text. For the fourth step, use all inlier correspondences for refining the previously obtained estimate for the homography. Also make sure that you use the recommended data normalization before computing the homography. The data normalization should be carried out as mentioned in Algorithm 4.2 on page 109 of the text.

Show the final consensus set of the correspondences by drawing lines connecting the corresponding feature points in the two images. Feel free to use the same OpenCV function for this purpose that you used in Homework 3.

Demonstrate the accuracy of the calculated homography by showing a three-panel display of images consisting of the domain image, the range image, and the transformed range image.