

EE 576 - Hw 3

Consider scene images as given - varying in illumination. For each different type of local representation, show the resulting representation via superposing the respective representation on the original image (ie keypoints shown as points, lines shown as lines) and evaluate the effect of varying illumination on representation.

Q1. Write a function that when given an image, applies either Harris or SIFT features as specified by the user. It should show the resulting corners or keypoints superimposed on the original image. In case of Harris, it should write the list of corner locations to a text file. In case of SIFT, it should write the list of keypoint locations and the associated 128 dimensional vectors to a text file.

Q2. Design and implement an algorithm that represents images using Hough Transform. It should show the resulting lines superposed on the original image. You should write the list of lines with their parameters to a file. Pls compare the resulting line representations on each scene and illumination.

Q3. Design and implement an algorithm that represents images using BOW. You should show your vocabulary and your histogram. Pls compare the resulting BOW representations on each scene and illumination.

You may use the available OpenCV methods. Pls compare the resulting representations on each scene and illumination. Write a very short report that explains your methodology and then discusses your results for each part.