Image Processing

ECE 4367 / ECE 5367
Fall 2019

Project 4

The aim of this project is to assess the effectiveness of SIFT features for object recognition. To accomplish this aim, select a traffic sign (e.g., see this link) and using your mobile device, take ~10 images of outdoor scenes that include the selected sign. Make sure to include various sizes and poses of the sign, including perhaps occlusions. Use the SIFT implementation available at VLFeat.org to investigate the matching capabilities of SIFT under different geometric and photometric variations.

You may work in groups of 2 or 3 and upload the following two items to Blackboard as a <u>single ZIP file</u>.

- A brief report that summarizes the results of the recognition task. This may be presented as a table that includes the type of deformation and the accuracy of the matches.
- Matlab code that, when executed, takes each of the test images one at a time (with pauses in-between) and displays the matched SIFT points between the image and the reference traffic sign. Be sure to include the test images and the reference sign in the ZIP file.

Note: This project will count as two quiz grades.

Deadline: Midnight on Nov. 27th