CV Assignment - 2

Image Mosaicing

Deadline : 11:55 PM on 17th February 2019

Basic Guidelines

- The assignment aims to familiarize you with the concept of homography estimation.

- **Make sure that the work you submit in this assignment is your own. DO NOT COPY ANY PART FROM ANY SOURCE including your friends, seniors or the internet. Any breach of this rule could result in serious actions including an F grade in the course.**

- You are required to submit your code and report any time before **11:55 PM on 17th February, 2019**.

Procedure

1. Use any feature detector and descriptor (e.g. SIFT) to find matches between two partially overlapping images.

2. Estimate the homography matrix between the two images robustly.

3. Transform one of the images to the others reference frame using the homography matrix.

4. Stitch the two images together.

5. Repeat this for multiple images to produce a singly mosaic / panorama.

Submission

- The code can be implemented in MATLAB or Python.

- Your code should be modular, with comments clearly outlining the function of each module.

- The code must be robust and scalable, i.e, it should work for any number of images of any size and generate a reasonable output.

- There are some sample images included in the assignment, these images are NOT the exhaustive test set. Your code may be tested on a different set.

- Show image stitching results on **additional images captured with your camera**.

- You are allowed to use in-built functions for feature detection and matching but are required to write the code to build the homography matrix by yourself.

- Attempts to implement feature detector algorithms from scratch shall receive bonus points.

- You are also required to submit a pdf report that
    1. Explains the procedure, with images of intermediate steps.
    2. Explains the code (include the code in the report while doing so).
    3. Demonstrates the results (on provided images as well as additional images from your camera).

- Please ensure that the report contains your roll number. Zip the code and report for submission. The zip file should be named ***<roll_number>_assignment2.zip***