CS 6870 : Digital Video Processing Assignment -2

Panorama Creation - 15 Marks

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Problem statement

1. Implement (for Y = 0) the Harris point detector or (for Y=1) the Hessian point detector. You can use an off-the-shelf Gaussian smoother.
2. In adjacent frames, match these points using proximity and a simple Sum-of-Squared-Difference. Use the RANSAC algorithm to ensure that the matchings are correct.
3. Finally, use a projective model to stitch the frames together to create a panorama.
4. Test your algorithm on images taken from your smartphone with (1) pure rotation (i.e. no camera translation) and (2) planar scenes with camera translation.

Instructions

- **Do not use libraries like opencv (you can use it only to read/write images).**
- **You can use numpy.**
- **Report should contain graphical results, inferences and analysis.**

Suggested Programming language:

Python, C++, Matlab

Submission Guidelines

- **Dead line : 06/04/2025 11:59 PM**
- **PDF & Code Upload:** In Moodle.
  Include code and pdf into a zip file with naming format: **RollNo_FName_AssignmentNumber.zip**.
  Ex. CS15D001_Amitabh_1.zip.
- Email submissions will not be accepted. Reduce file size (if required).
- This is not a team assignment.

TAs:

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