

INF 5300 - Lab on Motion estimation

This lab will use MATLAB to implement and explore motion estimation/optical flow.

The following Matlab scripts implement Lucas Kanade as a dense pyramid estimation.

<http://www.mathworks.com/matlabcentral/fileexchange/23142-iterative-pyramical-lk-optical-flow>

Get familiar with the code and use demo.m to apply it to the demo images.

Try to write your own code to visualize the motion using the color table from the lecture notes.

One challenge with using all possible positions for flow estimation is the computation cost involved. Compare both the speed and performance to using a simple corner detector to choose only “good regions to track” based on the Shi&Tomasi feature tracker. The fellow scripts can track sparse motion estimates precomputed in vectors X1 and X2:

<http://www.mathworks.com/matlabcentral/fileexchange/30822-lucas-kanade-tracker-with-pyramid-and-iteration>

From the last link, you need to write your own code for the Harris corner detector, and use LkTrackPyr to track a pair of two images based on the locations detected in one of the images.