

COS429

Computer Vision

Homework No.5

Due: 11:59pm, Tuesday, November 18, 2008

This programming assignment is concerned with using OpenCV to analyze the motion in a video sequence. OpenCV has implemented Optical Flow analysis base on Shi-Tomasi features [1] and Lucas Kanade [2] tracking algorithm.

For this homework, you need to write a program which takes a video as input and returns the estimated optical flow of each frame interactively, see example below.



Each red arrow is a motion vector of the feature being tracked.

For testing, you may use the training data of task 3 and task 4 to see how optical flow captures the motion of individual avatars and the background.

Submission: Please submit the c++ code, executable, and an image of one frame with optical flow information to Blackboard
(<https://blackboard.princeton.edu/>).

References:

- [1] Shi J, Tomasi C. Good features to track. IEEE Conference on Computer Vision and Pattern Recognition, 1994
- [2] Lucas B D and Kanade T 1981, An iterative image registration technique with an application to stereo vision. Proceedings of Imaging understanding workshop