CAP5415 Computer Vision
Programming Assignment # 4

1. Implement Single Iteration Lucas-Kanade optical flow estimation algorithm. The input of your program will be a gray scale image. The program will output two matrices *u* and *v* (horizontal and vertical components of the optical flow) of the same size. For each test image, run your program for neighborhood sizes of 5, 7, 9 and 13. Plot the optical flow using the Matlab function 'quiver'.

2. Write a function for affine image warping. The input of your program will be a gray scale image and affine motion parameters, and the output will be an image warped by using the given parameters.

3. Implement global motion estimation algorithm by Bergen et. al. The input of the program will be two gray scale images I1 and I2, number of pyramid levels and number of iterations per pyramid level. The output will be affine motion parameters from image I1 to image I2 and a warping of image I1 using those parameters.

Deliverables:
1. Report including Input and Output images (Soft Copy)
2. Code (Soft copy)

Send your assignments by email to khurram@cs.ucf.edu or webct.

Submission Deadline: April 17, 2003 (23:59)