**Assignment 1: Feature Descriptors**

The goal of this assignment is to learn about extracting interest-points from images and using simple comparisons to establish correspondences between the interest points extracted from two different images of the same scene.

Take any image of your choice and make different versions of the image by applying rotation, scaling, different transformations, different amounts of noise, etc. Create different image pairs using the original image and the transformed images.

1) Create your own implementation for the Harris corner detector and use the existing OpenCV or MATLAB implementations for the SIFT detector. Apply these interest point extractors to the image pairs.

2) Compare each interest point extracted from one image with every interest point in the other image. Use standard metric like SSD (Sum of Squared Distance). Show your correspondences on the images.

3) Comment on the quality of the correspondences obtained with Harris on the one hand, and SIFT on the other.

**Submission of Your Work:**

You should turn in the report by 5th February, 2015. The report should include

1. A brief outline of two the two feature extraction algorithms.
2. A brief description of how you did the feature matching.
3. A description of parameters chosen for your best feature extraction and matching.
4. Your source code along with comments.
5. Go through the literature, and identify one recent feature descriptor. Read the paper and write a short paragraph regarding the descriptor. Give the reference of the paper.