**The LNMIIT, Jaipur**

**Computer Vision, 2018**

**Assignment #1**

This programming assignment is to make you understand the geometric transformations on images. You can implement it in MATLAB or OpenCV.

1. Apply the following geometric transformations on *cameraman.tiff* and display the results (warped images) for each case.
2. Translation by (10, 20)
3. Rotation by π/4
4. Reflection with respect to diagonal
5. A scaling by half in the horizontal direction and one third in the vertical direction
6. A shear of 0.5 in x direction
7. Given the following original and corresponding warped image, compute the affine transformation for each case.
8. Bill.png and BillWarp.png
9. Steve\_Jobs.jpg and Steve Warp.jpg (Files are attached)

**NOTE:** You have to write your own functions for each problem. You may only use the inbuilt functions for image reading, writing and interpolation. In the first problem, use forward as well as well inverse transformation for getting the results.

Submit the report including your results and assumptions along with the codes in a zip file on CV classroom. You may work in a team of four students.