School of Computer Science Engineering and Technology

Course- **BTech**
Course Code- **CSET340**

Type- **Specialization Elective**
Course Name- **Advanced Computer Vision and Video Analytics**

Year- **2026**
Date- **19-23-Jan-2026**

Semester- **EVEN**
Batch- **2023-2027 (VI Sem)**

Lab Assignment No. 2

Exp. No.	Name	CO-1	CO-2	CO-3
1.	To perform Basic Image Transformations, Histogram equalization.	✓		

Objective: To perform Basic Image Transformations, Histogram equalization. Perform the provided task as follows.

1. **Perform the following Geometric transformations: Scaling, rotation, translation, Sher (Vertical), Sher (Horizontal), Reflection on the "Lena_Image.png" and use interpolation for the same.**
2. **Perform the following intensity transformation over the Grayscale Image.**

   2.1 Negative Transformation (camera_man.jpg)
   2.2 Logarithmic Transformation. (Lena_Image.png)
   2.3 Inverse Logarithmic (Exponential) Transformation ((Lena_Image.png))
   2.4 Power Law Transformation (for gamma < 1 : gamma_1.jpg , for gamma >1 : gamma_2.jpg)
   2.5 Piecewise linear transform: Contrast Stretching on a low contrast gray scaled image.(LowContrast2.jpg)
3. **Draw histogram of different images provided which represent a dark image (dark.jpg), light image(bright.jpg), low contrast(lowContrast1.jpg) and high contrast image(highcontrast1.jpg).**
4. **Apply histogram equalization (hist_1.jpg) and compare the histogram plots (before and after equalization).**
5. **Perform Local histogram equalization or Adaptive histogram equalization (AHE) on the input image. (AHE.jpg).**
6. **Perform Contrast Limited Adaptive histogram equalization (CLAHE) and compare the results with AHE. (AHE.jpg)**

Note:- **Suggested Platform:** Python: Jupyter Notebook/Visual Studio Code/Google Colab.
Mode of Delivery: Face-to-face: Instructor-led discussion and live coding demonstration. Hands-on Practice via Google Colab/VS code/Notebook.
Submission: On LMS within the prescribed time frame.