DIP Lab Assignment 2

Deadline: 19/2/24

Write a program (do not use built in functions) to perform image enhancement using histogram equalization method on the images given in the folder Assignment 2/equil'.

Additionally, implement and demonstrate histogram matching/specification. Histogram matching manipulates the pixels of an input image so that its histogram matches the histogram of the reference image thereby enhancing the original image. If the images have multiple channels, the matching is done independently for each channel, as long as the number of channels is equal in the input image and the reference. The images are given in the folder Assignment 2/specfi.

For each problem:

1. Plot the un-normalized histograms for the input, reference and the output images.
2. Plot the normalized cumulative distribution that is used as the transformation function in histogram equalization/specification.
3. Create subplots to display the output images.

While uploading the assignment make a Jupiter file with proper headings and the image experimented as comments. Also write your name and roll no as comments on the Jupiter file. This full assignment 2 will be compiled in a single Jupiter file. Please save the file with your Rollno_assisgnment2

Feel free to explore any additional and ask.

Extra: Explore adaptive histogram equalization (AHE) and contrast-limited adaptive histogram equalization (CLAHE)