

## **Traditional image processing techniques:**

- 1) Go through the theory and mathematics involved in gaussian filtering, mean filtering and bilateral filtering and implement them on some images. (Can do it from scratch or using OpenCV)
- 2) Find about gaussian, salt and pepper and poisson noise and in which images/conditions they are more intense and some ways to tackle them.
- 3) Read about the sobel filter and try its opencv function.
- 4) Read about low pass and high pass filtering in images and significance of high and low frequency components in images. Check whether Gaussian and mean filters act as low pass filters and sobel filters act as a high pass filter.
- 5) Get familiar with basic opencv modules for tasks like resizing an image, drawing something on the image say circles or lines, grayscale conversion (also see how the conversion is done mathematically) , sharpening and blurring an image. Try to find some other interesting (and useful) functions on open cv which you can present to everyone.
7. Read about contour tracing, Bounding Boxes, corner Detection algorithms/techniques. And try to implement it in code.

Integrates all codes and explanations (in Markdown) in a Jupyter or Colab notebook or a python file as you wish. You can even use c++ if you want.