**Image Filtration by Edge detection using Python OpenCV**

**Source Code:**

**#**Code For Gaussian Filter

import cv2

import NumPy as np

img = cv2.imread(r"C:\Users\Bhavishya.G\Desktop\nature1.jfif")

rowa, cols = img. shape [:2]

output\_gaus = cv2.GaussianBlur(img, (5,5),0)

cv2.imshow('original’, img)

cv2.imshow('Gaussian’, output\_gaus)

cv2.waitkey(0)

#Code For Median Blur

import cv2

import NumPy as np

img = cv2.imread(r"C:\Users\Bhavishya.G\Desktop\nature1.jfif")

rowa, cols = img.shape[:2]

output\_med = cv2.medianBlur(img,5)

cv2.imshow('original',img)

cv2.imshow('MedianBlur',output\_med)

cv2.waitkey(0)

#Code For Kernel Blur

import cv2

import NumPy as np

img = cv2.imread(r"C:\Users\Bhavishya.G\Desktop\nature1.jfif")

rowa, cols = img.shape[:2]

kernel\_25 = np.ones((20,20), np.float32) / 500.0

output\_kernel = cv2.filter2D(img, -1, kernel\_25)

cv2.imshow('kernel blur',output\_kernel)

cv2.imshow('original',img)

cv2.waitkey(0)

#Code For Bilateral Filter

import cv2

import numpy as np

img = cv2.imread(r"C:\Users\Bhavishya.G\Desktop\nature1.jfif")

rowa, cols = img.shape[:2]

output\_bil = cv2.bilateralFilter(img,5,6,6)

cv2.imshow('original',img)

cv2.imshow('Bilateral',output\_bil)

cv2.waitkey(0)

#Code for Sharpening

import cv2

import numpy as np

img = cv2.imread(r"C:\Users\Bhavishya.G\Desktop\nature1.jfif")

gaussian\_blur = cv2.GaussianBlur(img,(7,7),2)

sharpened1 = cv2.addWeighted(img,1.5, gaussian\_blur, -0.5, 0)

sharpened2 = cv2.addWeighted(img,3.5, gaussian\_blur, -2.5, 0)

sharpened3 = cv2.addWeighted(img,7.5, gaussian\_blur, -6.5, 0)

cv2.imshow('original',img)

cv2.imshow('sharpened3',sharpened3)

cv2.imshow('sharpened2',sharpened2)

cv2.imshow('sharpened1',sharpened1)

cv2.waitkey(0)