

DSA0210 Computer Vision with Open CV LAB Experiments

Experiment- 18: Perform Sharpening of Image using Laplacian mask with positive centre coefficient.

PROGRAM:

```
import cv2

import numpy as np

import matplotlib.pyplot as plt

# Read the input image
img = cv2.imread(r"D:\New Folder\input.jpeg")

# Check if image is loaded
if img is None:
    raise FileNotFoundError("Image not found. Check the file path.")

# Convert image to grayscale
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

# Laplacian mask with positive center coefficient
laplacian_mask = np.array([
    [0, -1, 0],
    [-1, 5, -1],
    [0, -1, 0]
])

# Apply Laplacian sharpening
sharpened = cv2.filter2D(gray, -1, laplacian_mask)
```

```
# Display images
plt.figure(figsize=(8, 4))

plt.subplot(1, 2, 1)
plt.imshow(gray, cmap="gray")
plt.title("Original Grayscale Image")
plt.axis("off")

plt.subplot(1, 2, 2)
plt.imshow(sharpened, cmap="gray")
plt.title("Sharpened Image (Positive Laplacian)")
plt.axis("off")

plt.tight_layout()
plt.show()
```

OUTPUT:

