

1. Image Filters

- Read the two images (image1.jpg & image2.jpg) from first assignment.
- Apply a 3×3 mean filter on it.
- Apply the following gradient filters: Roberts (2×2), Prewitt (3×3), and Sobel (3×3). The definition of the filters is given below.

- **Roberts**

-1	0	0	-1
0	1	1	0

- **Prewitt**

-1	-1	-1	-1	0	1
0	0	0	-1	0	1
1	1	1	-1	0	1

- **Sobel**

-1	-2	-1	-1	0	1
0	0	0	-2	0	2
1	2	1	-1	0	1

- You can use **cv2.filter2D** function for convolution.
- Compare your output with the built-in Sobel filter of OpenCV.