

# import cv2

```
import cv2
import numpy as np
from skimage import img_as_ubyte

original image
img = cv2.imread("C:\\Users\\najmeh \\
\\Downloads\\Noise dnoise.jpg", 0)
img = img/255

cv2.imshow('original image', img)
cv2.waitKey(0)
()cv2.destroyAllWindows

blank image
x,y = img.shape
g = np.zeros((x,y), dtype=np.float32)

salt and pepper amount
نویز 50 درصد میباشد... برای 10 درصد فقط کافی
است پیر را 0.05 و برای 25 درصد 0.125 بنویسیم
pepper = 0.25
salt = 1 - pepper

create salt and pepper noise image
:for i in range(x)
:for j in range(y)
()rnd=np.random.random
:if rnd < pepper
g[i][j] = 0
:elif rnd > salt
g[i][j] = 1
:else
g[i][j] = img[i][j]

cv2.imshow('image with noise', g)
cv2.waitKey(0)
()cv2.destroyAllWindows

img_noise = g
denoise image
mean filter (average)
m = 5
n = 5
denoise_mean = cv2.blur(img_noise, (m,n))

median filter
img_noise_median = np.clip(img_noise, -1,
1) #pixel value range
img_noise_median =
img_as_ubyte(img_noise_median) #convert
to uint8
denoise_median =
cv2.medianBlur(img_noise_median, 5)

cv2.imshow('Denoise Mean',
denoise_mean)
cv2.imshow('Denoise Median',
denoise_median)

cv2.waitKey(0)
()cv2.destroyAllWindows
```