**READING MARTERIAL**

**Discrete Fourier Transform**

<http://madebyevan.com/dft/>

**Discrete Gaussian Kernel:**

<http://dev.theomader.com/gaussian-kernel-calculator/>

**HoG paper:**

Dalal N, Triggs B. Histograms of oriented gradients for human detection[C]. 2005.

**How to implement HoG?**

<https://www.learnopencv.com/histogram-of-oriented-gradients/>

**Mask RCNN paper:**

<https://arxiv.org/pdf/1703.06870>

**From R-CNN to Mask R-CNN**

<https://blog.athelas.com/a-brief-history-of-cnns-in-image-segmentation-from-r-cnn-to-mask-r-cnn-34ea83205de4>

**Sample code of filter:**

import cv2

import numpy as np

#read image

im = cv2.imread("nus\_p.png")

#do convolution

kernel = np.array([[-1, -1, -1], [-1, 8, -1], [-1, -1, -1]])

r = cv2.filter2D(im, -1, kernel)

#show image

cv2.imshow("r",r)

cv2.waitKey(0)

However, median filter code may be different for this filter, you may need to do some other works.