1. Filter Canny

import cv2

import numpy as np

import matplotlib.pyplot as plt

from skimage import data

img = data.camera()

img\_canny = cv2.Canny(img, 100, 200)

fig, axes = plt.subplots(2, 2, figsize=(20, 20))

ax = axes.ravel()

ax[0].imshow(img, cmap='gray')

ax[0].set\_title("Citra Input")

ax[1].hist(img.ravel(), bins=256)

ax[1].set\_title("Histogram Citra Input")

ax[2].imshow(img\_canny, cmap='gray')

ax[2].set\_title("Citra Output")

ax[3].hist(img\_canny.ravel(), bins=256)

ax[3].set\_title("Histogram Citra Output")

plt.show()

1. Laplacian

import cv2

from matplotlib import pyplot as plt

img0 = cv2.imread('cat.jpg')

gray = cv2.cvtColor(img0, cv2.COLOR\_BGR2GRAY)

img = cv2.GaussianBlur(gray, (3, 3), 0)

laplacian = cv2.Laplacian(img, cv2.CV\_64F)

plt.subplot (1, 2, 1), plt.imshow(img,cmap='gray')

plt.title ('Original'), plt.xticks([]), plt.yticks([])

plt.subplot (1, 2, 2), plt.imshow (laplacian, cmap = 'gray')

plt.title('Laplacian'), plt.xticks([]), plt.yticks([])

plt.show()

1. Laplacian 2
2. import cv2

img = cv2.imread('cat.jpg', 0)

blur = cv2.GaussianBlur(img, (3, 3),0)

laplacian = cv2.Laplacian(blur, cv2.CV\_64F)

laplacian = laplacian/laplacian.max()

cv2.imshow('laplacian-gaussian', laplacian)

cv2.waitKey(0)

4. Prewitt

import cv2

import numpy as np

import matplotlib.pyplot as plt

from skimage import data

img = data.camera()

kernelx = np.array([[1, 1, 1], [0, 0, 0], [-1, -1, -1]])

kernely = np.array([[-1, 0, 1], [-1, 0, 1], [-1, 0, 1]])

img\_prewittx = cv2.filter2D(img, -1, kernelx)

img\_prewitty = cv2.filter2D(img, -1, kernely)

img\_prewitt= img\_prewittx + img\_prewitty

fig, axes = plt.subplots(4, 2, figsize=(20, 20))

ax = axes.ravel()

ax[0].imshow(img, cmap ='gray')

ax[0].set\_title("Citra Input")

ax[1].hist(img.ravel(), bins=256)

ax[1].set\_title("Histogram Citra Input")

ax[2].imshow(img\_prewittx, cmap='gray')

ax[2].set\_title("Citra Output Prewitt X")

ax[3].hist(img\_prewittx.ravel(), bins=256)

ax[3].set\_title("Histogram Citra Output Prewitt X")

ax[4].imshow(img\_prewitty, cmap='gray')

ax[4].set\_title("Citra Output Prewitt Y")

ax[5].hist(img\_prewitty.ravel(), bins=256)

ax[5].set\_title("Histogram Citra Output Prewitt Y")

ax[6].imshow(img\_prewitt, cmap='gray')

ax[6].set\_title("Citra Output Prewitt")

ax[7].hist(img\_prewitt.ravel(), bins=256)

ax[7].set\_title("Histogram Citra Output Prewitt")

fig.tight\_layout()

plt.show()

5.Sobel

import cv2

import numpy as np

import matplotlib.pyplot as plt

from skimage import data

img = data.camera()

img\_sobelx = cv2.Sobel(img, cv2.CV\_8U, 1, 0, ksize=5)

img\_sobely = cv2.Sobel(img, cv2.CV\_8U, 0, 1, ksize=5)

img\_sobel = cv2.add(img\_sobelx, img\_sobely)

fig, axes = plt.subplots(4, 2, figsize=(20, 20))

ax = axes.ravel()

ax[0].imshow(img, cmap='gray')

ax[0].set\_title("Citra Input")

ax[1].hist(img.ravel(), bins=256)

ax[1].set\_title("Histogram Citra Input")

ax[2].imshow(img\_sobelx, cmap='gray')

ax[2].set\_title("Citra Output")

ax[3].hist(img\_sobelx.ravel(), bins=256)

ax[3].set\_title("Histogram Citra Output")

ax[4].imshow(img\_sobely, cmap='gray')

ax[4].set\_title("Citra Output")

ax[5].hist(img\_sobely.ravel(), bins=256)

ax[5].set\_title("Histogram Citra Output")

ax[6].imshow(img\_sobel, cmap='gray')

ax[6].set\_title("Citra Output")

ax[7].hist(img\_sobel.ravel(), bins=256)

ax[7].set\_title("Histogram Citra Output")

fig.tight\_layout()

plt.show()