task-5-02-shape-edge

January 12, 2024
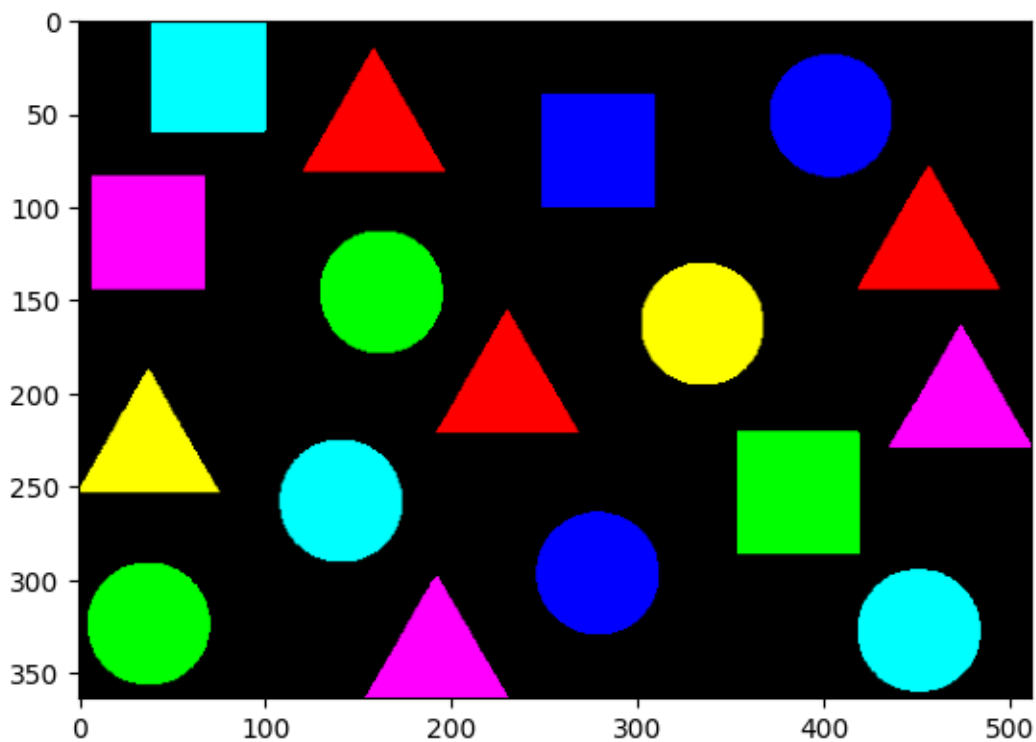
Task 5.2 | 65011428 Papinwich Asnapetch

```
[1]: import cv2
     from matplotlib import pyplot as plt
     import numpy as np
```

```
[60]: # Load Image
      img = cv2.imread('colorobject.png')
      img_RGB = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
      img_HSV = cv2.cvtColor(img, cv2.COLOR_BGR2HSV)

      plt.imshow(img_RGB)
      print(img_RGB.shape)
```

```
(364, 512, 3)
```

```
[67]: # Filter blue
      upper_blue = (140, 255, 255)
      lower_blue = (120, 50, 50)
      mask_blue = cv2.inRange(img_HSV, lower_blue, upper_blue)
      mask_blue = cv2.cvtColor(mask_blue, cv2.COLOR_GRAY2BGR)


      # Filter red
      upper_red = (20, 255, 255)
      lower_red = (0, 50, 50)
      mask_red = cv2.inRange(img_HSV, lower_red, upper_red)
      mask_red = cv2.cvtColor(mask_red, cv2.COLOR_GRAY2BGR)


      # Mask red & blue region
      mask_BR = mask_blue + mask_red
      BR = cv2.bitwise_and(img_RGB, mask_BR)

      # Display
      plt.imshow(BR)
```
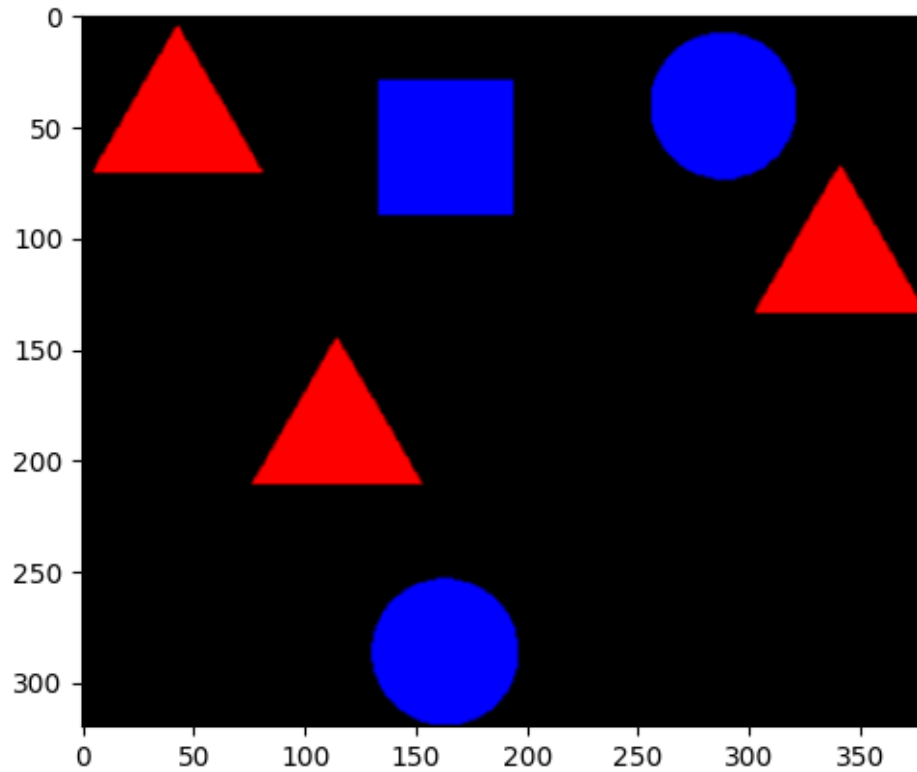
[67]: <matplotlib.image.AxesImage at 0x1b3ffa6ba90>
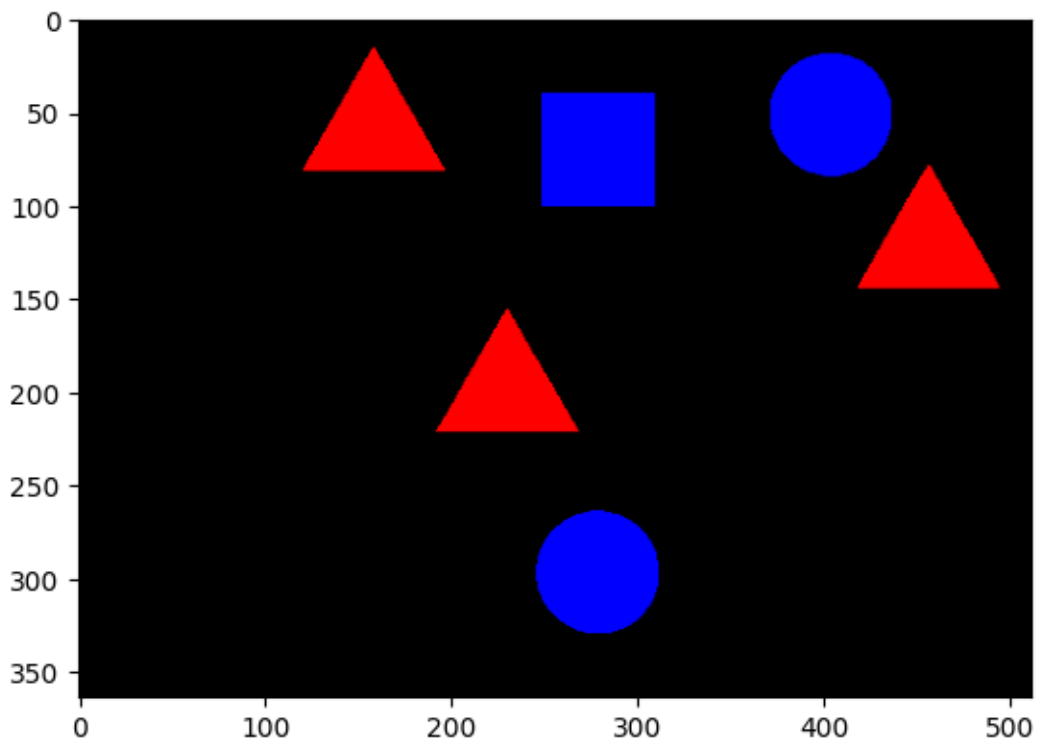
```
[58]: # Crop image
      img_cropped = cv2.getRectSubPix(BR, (380, 320), (305, 170))
      plt.imshow(img_cropped)
```

[58]: <matplotlib.image.AxesImage at 0x1b381384430>


```
[66]: # Apply Laplacian
      res = cv2.Laplacian(img_cropped, cv2.CV_64F, ksize= 3)

      res = cv2.resize(res, (512, 364))

      plt.imshow(res)
```

Clipping input data to the valid range for imshow with RGB data ([0..1] for
floats or [0..255] for integers).

[66]: <matplotlib.image.AxesImage at 0x1b3fe14fa90>