OpenCV

drawing

Рисование

- img : The image where you want to draw the shapes
- color : Color of the shape. for BGR, pass it as a tuple, eg: (255,0,0) for blue. For grayscale, just pass the scalar value.
- thickness : Thickness of the line or circle etc. If **-1** is passed for closed figures like circles, it will fill the shape. *default thickness = 1*
- lineType : Type of line, whether 8-connected, anti-aliased line etc. *By default, it is 8-connected.* **cv.LINE_AA** gives anti-aliased line which looks great for curves.

Рисование примитивов

```
import numpy as np
import cv
# Create a black image
img = np.zeros((512,512,3), np.uint8)
# Draw a diagonal blue line with thickness of 5 px
```

Линия

```
cv2.line(img,(0,0),(511,511),(255,0,0),5)
```

Прямоугольник

```
cv2.rectangle(img,(384,0),(510,128),(0,255,0),3)
```

```
cv2.circle(img,(447,63), 63, (0,0,255), -1)
```

Рисование примитивов

```
import numpy as np
import cv2
# Create a black image
img = np.zeros((512,512,3), np.uint8)
# Draw a diagonal blue line with thickness of 5 px
```

Окружность

cv2.circle(img,(447,63), 63, (0,0,255), -1)

To draw a circle, you need its center coordinates and radius. We will draw a circle inside the rectangle drawn above.

Эллипс

One argument is the center location (x,y). Next argument is axes lengths (major axis length, minor axis length). angle is the angle of rotation of ellipse in anti-clockwise direction. startAngle and endAngle denotes the starting and ending of ellipse arc measured in clockwise direction from major axis. i.e. giving values 0 and 360 gives the full ellipse.

cv2.ellipse(img,(256,256),(100,50),0,0,180,255,-1)

Рисование примитивов

Полигон

```
import numpy as np
import cv2
# Create a black image
img = np.zeros((512,512,3), np.uint8)
```

To draw a polygon, first you need coordinates of vertices. Make those points into an array of shape ROWSx1x2 where ROWS are number of vertices and it should be of type int32. Here we draw a small polygon of with four vertices in yellow color.

```
pts = np.array([[10,5],[20,30],[70,20],[50,10]], np.int32)
pts = pts.reshape((-1,1,2))
cv2.polylines(img,[pts],True,(0,255,255))
```

Текст на изображениях

o put texts in images, you need specify following things.

- Text data that you want to write
- Position coordinates of where you want put it (i.e. bottom-left corner where data starts).
- Font type (Check **cv.putText()** docs for supported fonts)
- Font Scale (specifies the size of font)
- regular things like color, thickness, lineType etc. For better look, lineType = **cv.LINE_AA** is recommended.

```
import numpy as np
import cv2
# Create a black image
img = np.zeros((512,512,3), np.uint8)
font = cv2.FONT_HERSHEY_SIMPLEX
cv2.putText(img,'OpenCV',(10,500), font, 4,(255,255,255),2,cv2.LINE_AA)
```

Тестовое задание

Нарисовать такое изображение.

Размер 300x400px.