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學習

# computer-vision

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#computer-  
vision

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1:

◦ ◦

23◦ ◦

$$f : \mathbb{R}^2 \supset \mathbb{Q} \rightarrow \mathbb{R}$$

$f\Omega$

StackOverflow◦

◦ 01◦

◦ 01◦ ◦



◦ Lena

◦ 025540010 - 255



◦ ◦ ◦ RGB - - 32D◦ 0 - 2550 - 2550 - 255◦ {0,0,0}{255,255,255}{255,0,0}{255,255,0}◦ ◦



◦ ◦

1. [https //en.wikipedia.org/wiki/Sampling\\_signal\\_processing](https://en.wikipedia.org/wiki/Sampling_signal_processing)
2. RC Gonzalez RE Woods◦ Pearson Prentice Hall Upper Saddle River 2008◦
3. R◦ Szeliski◦ 2010◦
4. [https //en.wikipedia.org/wiki/Grayscale](https://en.wikipedia.org/wiki/Grayscale)

## Examples

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Python 2◦ Python◦

Linux python'python'◦ python 2.7◦

◦ OpenCV◦ ◦ python'pip'◦ python

PyPNG◦ pip

pip PyPNG

Linux / Mac Windows◦

ipython github◦

<https://github.com/Skorkmaz88/compvis101>

Python◦ ◦ PNG◦

Github

```
git clone https://github.com/Skorkmaz88/compvis101
```

## tutorial0.pyreadingImages.ipynbpython. ◦ ◦

```
# libs
import png

# We create a greyscale image as described in our text.
# To do that simply, we create a 2D array in python.
# x and y, x being horizontal and y being vertical directions.

x = []
y = []
# Play around with these pixels values to get different grayscale images, they should be
# in range of 0 - 255.
white = 255
gray = 128
black = 0
width = 100
height = 300

# Add 100 x 100 rectangle as just white(255) valued pixels
for i in range(0, 100):
    for j in range(0,100):
        y.append(white); # Pixel (i,j) is being set to a value, rest is coding trick to nest
two lists
        x.append(y)
        y = []

# Add 100 x 100 rectangle as just mid-gray(128) valued pixels
for i in range(0, 100):
    for j in range(0,100):
        y.append(gray);
        x.append(y)
        y = []

# Add 100 x 100 rectangle as just black(0) valued pixels
for i in range(0, 100):
    for j in range(0,100):
        y.append(black);
        x.append(y)
        y = []

# output image file
f = open('out.png', 'wb')
w = png.Writer(width, height , greyscale=True, bitdepth=8)
w.write(f, x)
f.close()
# If everything went well, you should have 3 vertically aligned rectangles white, gray and
black
# Check your working folder

# PART 2
# Read a grayscale image and convert it to binary

# This time we will binarize a grayscale image, to do that we will read pixels and according
to threshold we set
# we will decide if that pixel should be white or black
```





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