OpenCV-Python Tutorials Documentation

Release 1

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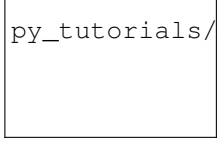
CHAPTER

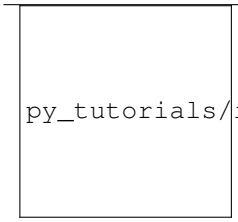
ONE

OPENCV-PYTHON TUTORIALS

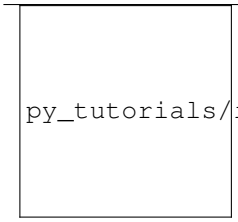
- *Introduction to OpenCV*

	Learn how to setup OpenCV on your computer!

- *Table-Of-Content-Core*

	Here you will learn the about the basic building blocks of the library. A must read and know for understanding how to manipulate the images on a pixel level.

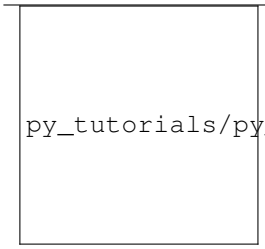
- *Table-Of-Content-ImgProc*

	In this section you will learn about the image processing (manipulation) functions inside OpenCV.

1.1 Introduction to OpenCV

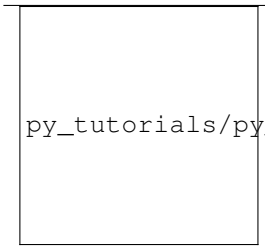
Here you can read tutorials about how to set up your computer to work with the OpenCV library. Additionally you can find a few very basic sample source code that will let introduce you to the world of the OpenCV.

- *Title of Doc comes here*



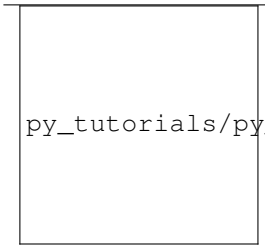
py_tutorials/py_setup/py_table_of_contents_setup/images/windows-logo.jpg

- *Install OpenCV-Python in Windows*



py_tutorials/py_setup/py_table_of_contents_setup/images/windows-logo.jpg

- *Install OpenCV-Python in Fedora*



py_tutorials/py_setup/py_table_of_contents_setup/images/fedora-logo.jpg

1.1.1 Title of Doc comes here

Goals

Explain here following things:

- What is this tutorial about ? What you will learn here?
- What are all new functions you will see here (eg **:ocv:func:‘borderInterpolate‘**)

Theory

- Some intuitive explanation of algorithm is given here
- If needed, give some equations as inline $g(i, j)$ or next line as,

$$g(i, h) = \sum_{k,l} f(i + k, j + l)h(k, l)$$

- If required, a Numpy implementation of algorithm also can be given as a separate subsection

Subsection Python Implementation [optional]

Numpy code comes here. To add code, do as follows :

```
import cv2
import numpy as np

print 'import done'
```

OpenCV sample

Here comes the original OpenCV code with explanation. Result also can included in this itself.

To add image, do as follows :

Notes, warnings, Todo etc can be done as follows :

Note: The explanation below belongs to the book

Warning: The explanation below belongs to the book

Todo

The explanation below belongs to the book

See Also:

The explanation below belongs to the book

external urls are given as Python which points to python site.

Internal url is called as Tutorial-Template

A book is cited as [Szeliski]

Common Errors [optional]

We can show solutions for some common mistakes while using certain functionalities, if any.

Exercises [optional]

Here we can give some additional tasks for reader to do

- like read and understand more advanced code on the same algorithm.
- Related SOF and answers.opencv.org questions

- Our own questions or tasks

References [optional]

Give references if any for better understanding of algorithm, like any standard textbooks, web links etc. Numbered references are given as

1. Learning OpenCV
2. Computer Vision Models

1.1.2 Install OpenCV-Python in Windows

Goals

In this tutorial, you will learn to setup OpenCV-Python in your Windows system. Below steps are tested for Windows 7.

Required Packages

1. Python
2. Numpy
3. OpenCV

Below are some optional packages which will be useful in your journey.

1. Matplotlib
2. SciPy

Install Python, Numpy, Matplotlib, Scipy to their default locations. To install OpenCV, you can either use prebuilt binaries or compile from source.

Installing OpenCV from prebuilt binaries

1. Goto opencv/../../2.7 folder.
2. Copy cv2.pyd to C:/Python27/lib/site-packeges
3. Open Python IDLE and type following codes in Python terminal.

```
>>> import cv2
>>> print cv2.__version__
```

If the results are printed out without any errors, congratulations !!! You have installed OpenCV-Python successfully.

Installing OpenCV from source

1. Put complete compilation steps here

1.1.3 Install OpenCV-Python in Fedora

Goals

In this tutorial, you will learn to setup OpenCV-Python in your Fedora system. Below steps are tested for Fedora 18.

Required Packages

1. Python
2. Numpy
3. OpenCV

Below are some optional packages which will be useful in your journey.

1. Matplotlib
2. SciPy

Install Python, Numpy, Matplotlib, Scipy to their default locations. To install OpenCV, you can either use prebuilt binaries or compile from source.

Installing OpenCV from prebuilt binaries

1. Install all packages with following command in terminal as root.

```
yum install python-numpy opencv opencv-python
```

1. Open Python IDLE and type following codes in Python terminal.

```
>>> import cv2
>>> print cv2.__version__
```

If the results are printed out without any errors, congratulations !!! You have installed OpenCV-Python successfully.

Installing OpenCV from source

1. Put complete compilation steps here

CHAPTER

TWO

INDICES AND TABLES

- *genindex*
- *modindex*
- *search*

BIBLIOGRAPHY

[Szeliski] Computer Vision Models