

Lesson 2 Build OpenCV Environment

1. Install Numpy

Each picture involves several pixels, which results in that a large number of arrays need to be processed in the program. Numpy is a extension library for Python, which handles multi-dimensional arrays more efficiently than Python's native array structures. Besides, it can improve the readability of codes.

Open command line terminal and then input command “**pip install numpy**” to install Numpy. For more information about Numpy, please move to the folder “**3.Python->Python Basic and Advanced Learning->Lesson 13 Python Numpy Basic Operation**”.

```
ubuntu@ubuntu-virtual-machine:~$ pip install numpy
```

2. Install OpenCV

OpenCV package can be obtained from Ubuntu repository. Then refresh the packages index and install the OpenCV package by typing the following commands.

- 1) `sudo apt update`: refresh the packages index

```
ubuntu@ubuntu-virtual-machine:~$ sudo apt update
```

- 2) `sudo apt install python3-opencv`: Install the package. During installation, input “y” to continue the execution and the complete installation may take 10s.

```
ubuntu@ubuntu-virtual-machine: ~  
File Edit View Search Terminal Help  
ubuntu@ubuntu-virtual-machine:~$ sudo apt install python3-opencv  
[sudo] password for ubuntu:  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done
```

3. Verify the Installation of OpenCV

We can import cv2 module to print the version of OpenCV so as to verify whether the installation is successful or not.

- 1) python3: enter Python
- 2) import cv2: import cv2 module
- 3) cv2.__version__: check the version

If the version of OpenCV is printed, the installation is successful.

```
ubuntu@ubuntu-virtual-machine:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> import cv2  
>>> cv2.__version__  
'3.2.0'
```