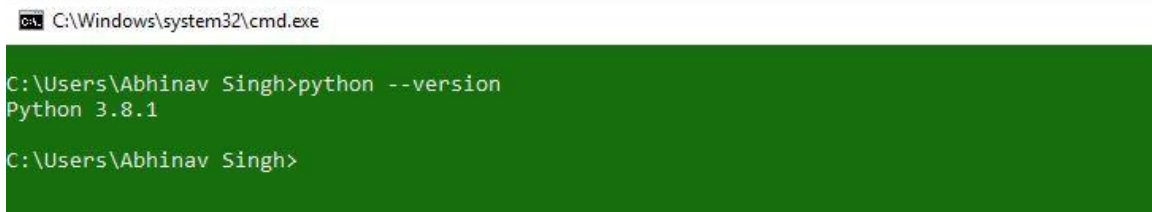


How to Install OpenCV for Python on Windows?

OpenCV is the huge open-source library for computer vision, machine learning, and image processing and now it plays a major role in real-time operation which is very important in today's systems. By using it, one can process images and videos to identify objects, faces, or even the handwriting of a human. When it is integrated with various libraries, such as Numpy, python is capable of processing the OpenCV array structure for analysis. To identify image patterns and its various features we use vector space and perform mathematical operations on these features. To install OpenCV, one must have Python and PIP, preinstalled on their system. To check if your system already contains Python, go through the following instructions: Open the **Command line** (search for **cmd** in the Run dialog(+ **R**). Now run the following command:

```
python --version
```

If Python is already installed, it will generate a message with the Python version available.

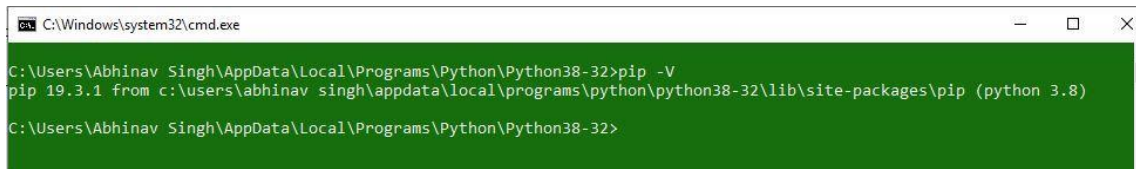


```
C:\Windows\system32\cmd.exe
```

```
C:\Users\Abhinav Singh>python --version
Python 3.8.1
C:\Users\Abhinav Singh>
```

If

Python is not present, go through How to install Python on Windows? and follow the instructions provided. **PIP** is a package management system used to install and manage software packages/libraries written in Python. These files are stored in a large “on-line repository” termed as Python Package Index (PyPI). To check if PIP is already installed on your system, just go to the command line and execute the following command:
pip -V



```
C:\Windows\system32\cmd.exe
```

```
C:\Users\Abhinav Singh\AppData\Local\Programs\Python\Python38-32>pip -V
pip 19.3.1 from c:\users\abhinav singh\appdata\local\programs\python\python38-32\lib\site-packages\pip (python 3.8)
C:\Users\Abhinav Singh\AppData\Local\Programs\Python\Python38-32>
```

If PIP is not present, go through How to install PIP on Windows? and follow the instructions provided.

Downloading and Installing OpenCV:

OpenCV can be directly downloaded and installed with the use of pip (package manager). To install OpenCV, just go to the command-line and type the following command:

```
pip install opencv-python
```

Beginning with the installation:

- **Type the command in the Terminal and proceed:**



```
Select C:\Windows\system32\cmd.exe - pip install opencv-python
```

```
C:\Users\Abhinav Singh>pip install opencv-python
```

- **Collecting Information and downloading data:**

```
C:\Windows\system32\cmd.exe - pip install opencv-python

C:\Users\Abhinav Singh>pip install opencv-python
Collecting opencv-python
  Downloading https://files.pythonhosted.org/packages/74/41/b01f308ca4a22c8c368ed4ee80ef5318efe2f221cd0024a3a0ee9df6a94d
/opencv_python-4.1.2.30-cp37-cp37m-win_amd64.whl (33.0MB)
    | 6.5MB 226kB/s eta 0:01:58
```

- **Installing Packages:**

```
C:\Windows\system32\cmd.exe - pip install opencv-python

C:\Users\Abhinav Singh>pip install opencv-python
Collecting opencv-python
  Downloading https://files.pythonhosted.org/packages/74/41/b01f308ca4a22c8c368ed4ee80ef5318efe2f221cd0024a3a0ee9df6a94d
/opencv_python-4.1.2.30-cp37-cp37m-win_amd64.whl (33.0MB)
    | 33.0MB 3.2MB/s
Collecting numpy>=1.14.5
  Downloading https://files.pythonhosted.org/packages/a9/38/f6d6d8635d496d6b4ed5d8ca4b9f193d0edc59999c3a63779cbc38aa650f
/numpy-1.18.1-cp37-cp37m-win_amd64.whl (12.8MB)
    | 12.8MB 939kB/s
Installing collected packages: numpy, opencv-python
```

- **Finished Installation:**

```
C:\Windows\system32\cmd.exe

C:\Users\Abhinav Singh>pip install opencv-python
Collecting opencv-python
  Downloading https://files.pythonhosted.org/packages/74/41/b01f308ca4a22c8c368ed4ee80ef5318efe2f221cd0024a3a0ee9df6a94d
/opencv_python-4.1.2.30-cp37-cp37m-win_amd64.whl (33.0MB)
    | 33.0MB 3.2MB/s
Collecting numpy>=1.14.5
  Downloading https://files.pythonhosted.org/packages/a9/38/f6d6d8635d496d6b4ed5d8ca4b9f193d0edc59999c3a63779cbc38aa650f
/numpy-1.18.1-cp37-cp37m-win_amd64.whl (12.8MB)
    | 12.8MB 939kB/s
Installing collected packages: numpy, opencv-python
Successfully installed numpy-1.18.1 opencv-python-4.1.2.30

C:\Users\Abhinav Singh>
```

To check if OpenCV is correctly installed, just run the following commands to perform a version check:

python

```
>>>import cv2
```

```
>>>print(cv2.__version__)
```

```
C:\Windows\system32\cmd.exe - python

C:\Users\Abhinav Singh>python
Python 3.7.4 (default, Aug 9 2019, 18:34:13) [MSC v.1915 64 bit (AMD64)] :: Anaconda, Inc. on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> import cv2
>>> print(cv2.__version__)
4.1.2
>>>
```