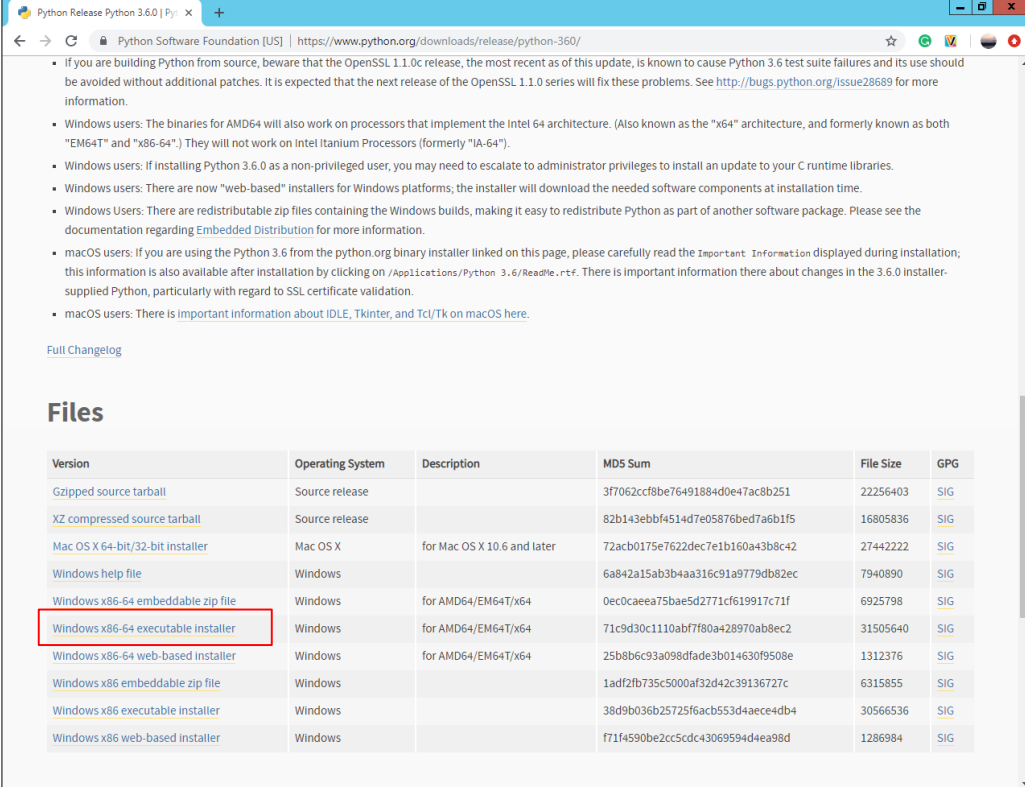


# Deep Learning Tools Installation for CPU only on Windows

## A. Installing Python 3.6.0

1. Go to official python website, <https://www.python.org/downloads/release/python-360/>



Python Release Python 3.6.0 | Py: X

Python Software Foundation [US] | <https://www.python.org/downloads/release/python-360/>

- If you are building Python from source, beware that the OpenSSL 1.1.0c release, the most recent as of this update, is known to cause Python 3.6 test suite failures and its use should be avoided without additional patches. It is expected that the next release of the OpenSSL 1.1.0 series will fix these problems. See <http://bugs.python.org/issue28689> for more information.
- Windows users: The binaries for AMD64 will also work on processors that implement the Intel 64 architecture. (Also known as the "x64" architecture, and formerly known as both "EM64T" and "x86-64".) They will not work on Intel Itanium Processors (formerly "IA-64").
- Windows users: If installing Python 3.6.0 as a non-privileged user, you may need to escalate to administrator privileges to install an update to your C runtime libraries.
- Windows users: There are now "web-based" installers for Windows platforms; the installer will download the needed software components at installation time.
- Windows Users: There are redistributable zip files containing the Windows builds, making it easy to redistribute Python as part of another software package. Please see the documentation regarding [Embedded Distribution](#) for more information.
- macOS users: If you are using the Python 3.6 from the python.org binary installer linked on this page, please carefully read the Important Information displayed during installation; this information is also available after installation by clicking on /Applications/Python 3.6/ReadMe.rtf. There is important information there about changes in the 3.6.0 installer-supplied Python, particularly with regard to SSL certificate validation.
- macOS users: There is [important information about IDLE, Tkinter, and Tcl/Tk on macOS here](#).

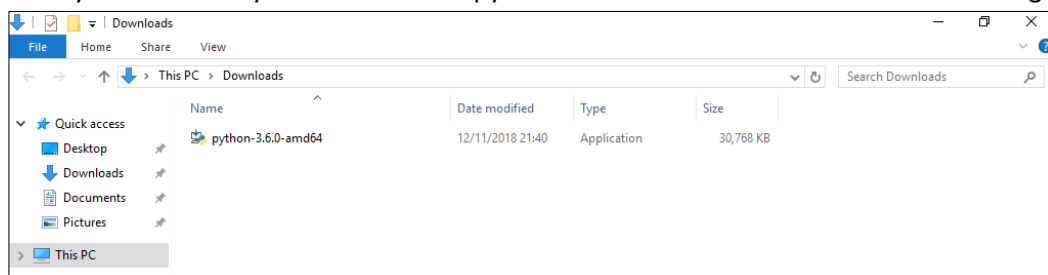
[Full Changelog](#)

### Files

Version	Operating System	Description	MD5 Sum	File Size	GPG
<a href="#">Gzipped source tarball</a>	Source release		3f7062ccf8be76491884d0e47ac8b251	22256403	<a href="#">SIG</a>
<a href="#">XZ compressed source tarball</a>	Source release		82b143ebb4514d7e05876bed7a6b1f5	16805836	<a href="#">SIG</a>
<a href="#">Mac OS X 64-bit/32-bit installer</a>	Mac OS X	for Mac OS X 10.6 and later	72acb0175e7622dec7e1b160a43b8c42	27442222	<a href="#">SIG</a>
<a href="#">Windows help file</a>	Windows		6a842a15ab3b4aa316c91a9779db82ec	7940890	<a href="#">SIG</a>
<a href="#">Windows x86-64 embeddable zip file</a>	Windows	for AMD64/EM64T/x64	0ec0caeea75bae5d2771cf619917c71f	6925798	<a href="#">SIG</a>
<b><a href="#">Windows x86-64 executable installer</a></b>	Windows	for AMD64/EM64T/x64	71c9d30c1110abf7f80a428970ab8ec2	31505640	<a href="#">SIG</a>
<a href="#">Windows x86-64 web-based installer</a>	Windows	for AMD64/EM64T/x64	25b8b6c93a098dfade3b014630f9508e	1312376	<a href="#">SIG</a>
<a href="#">Windows x86 embeddable zip file</a>	Windows		1adf2fb735c5000af32d42c39136727c	6315855	<a href="#">SIG</a>
<a href="#">Windows x86 executable installer</a>	Windows		38d9b036b25725f6acb553d4aece4db4	30566536	<a href="#">SIG</a>
<a href="#">Windows x86 web-based installer</a>	Windows		f71f4590be2cc5cdc43069594d4ea98d	1286984	<a href="#">SIG</a>

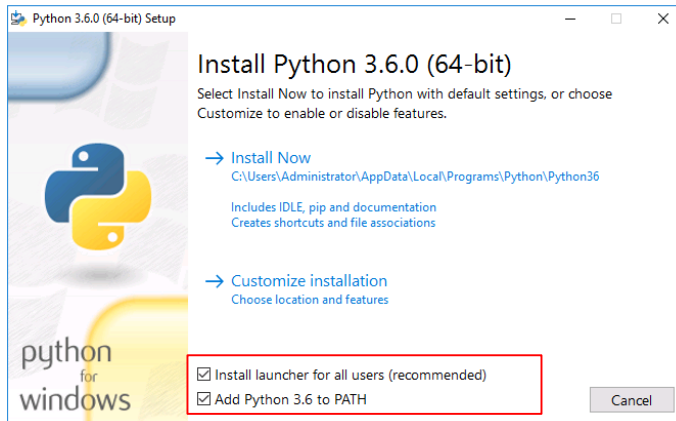
Click windowsx86-64-executable installer for downloading the python installer

2. Once you successfully downloaded the python installer will be shown like the following icon.

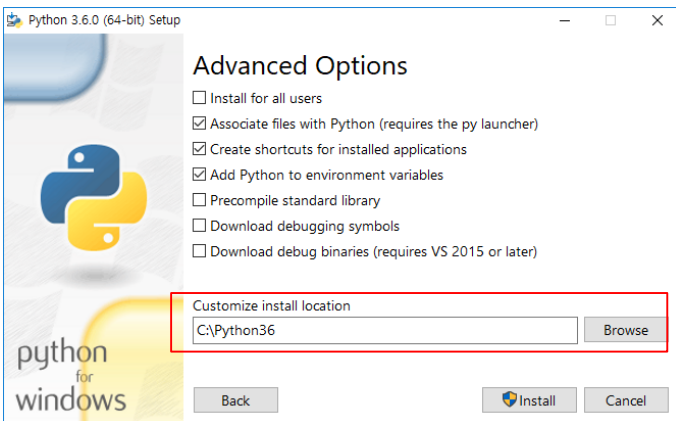
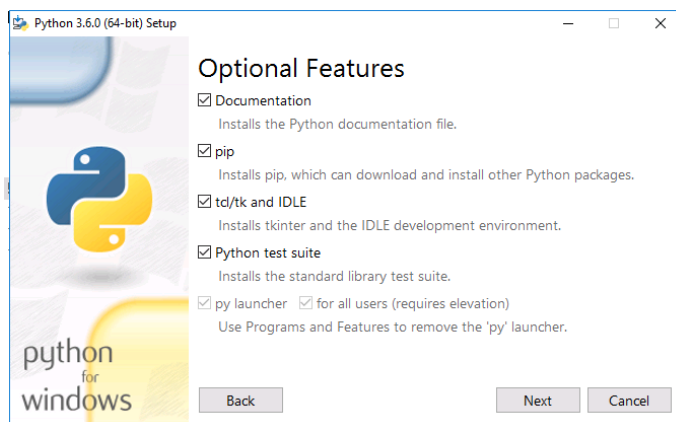


Double click the python installer file

Then the installer window will be shown as follow

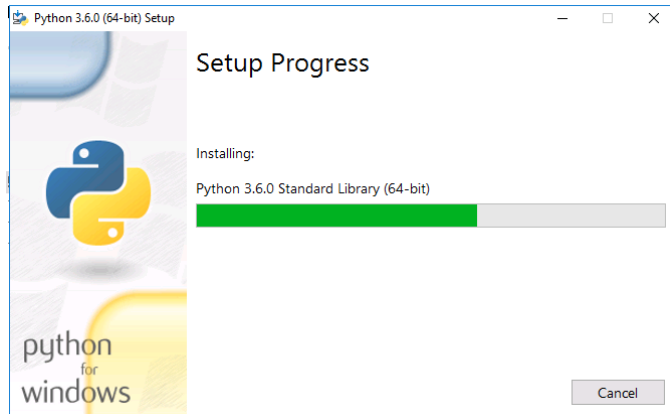


Tick the add Python 3.6 to PATH and then click customize installation



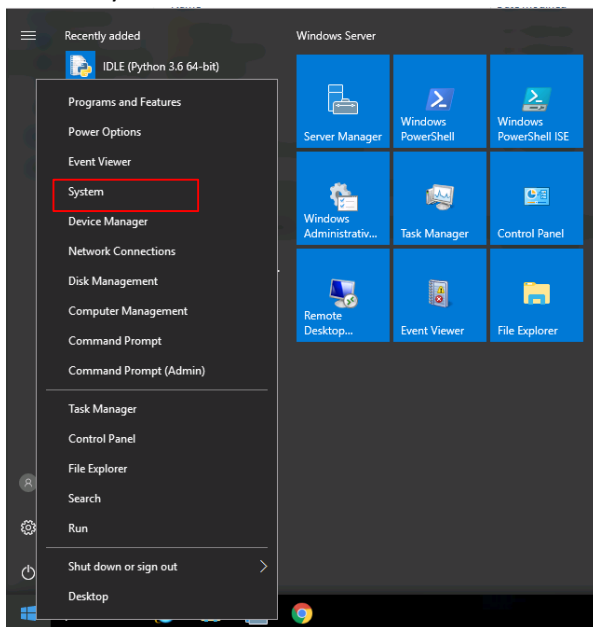
Put the python in C:\Python36 on folder location.

Wait till finish

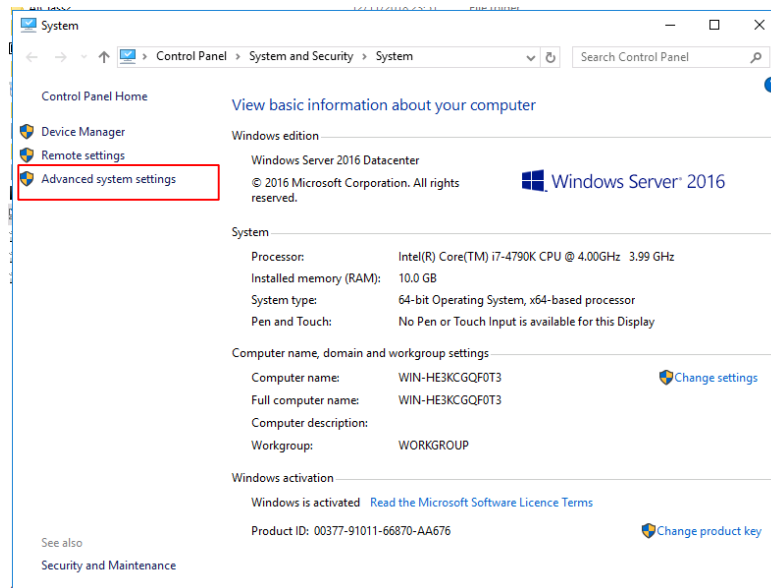


Close the window

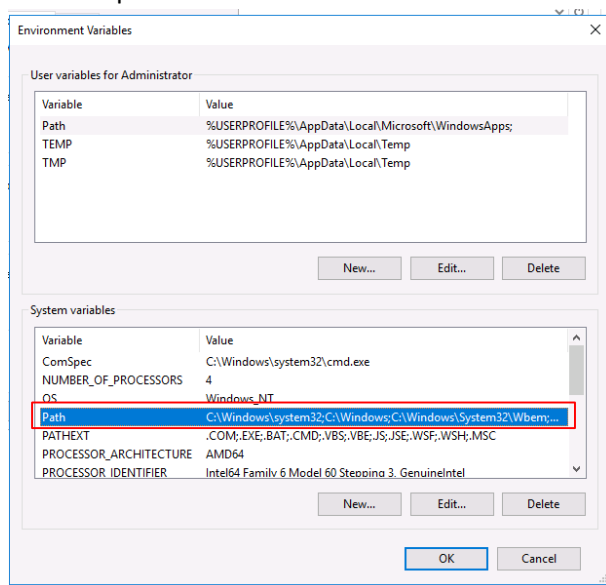
Add python directory to environment variables. by doing right click of windows icon and choose system



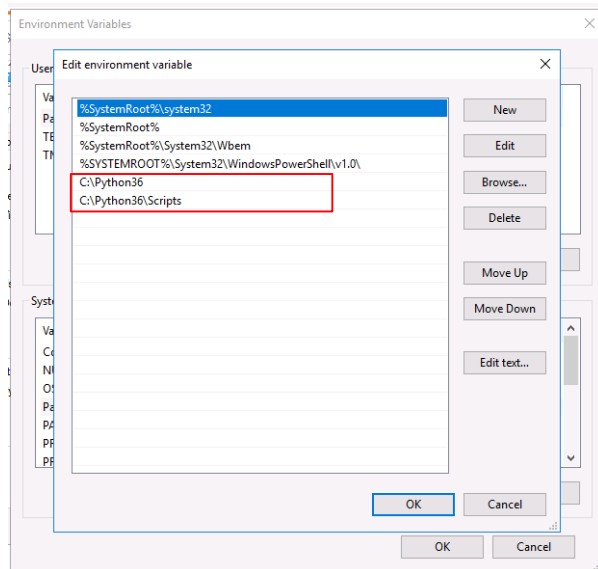
Then choose Advanced system settings



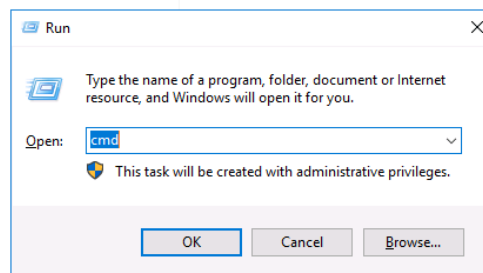
Click the path



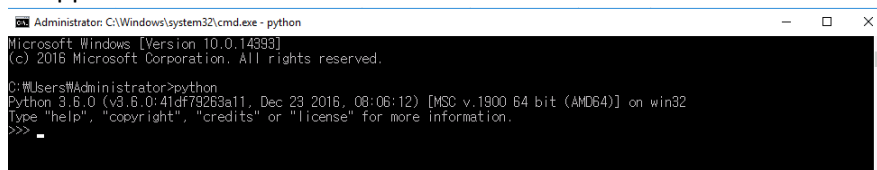
And add C:\Python36 and C:\Python36 to it



For checking whether the installation is correct or not, type windows + R on the keyboard, and type cmd



Type *python* on console and press enter, if you already successfully installed it the python console will appear



If the output is same with above picture, it indicates you already install it successfully.

## B. Installing CV2, Image library

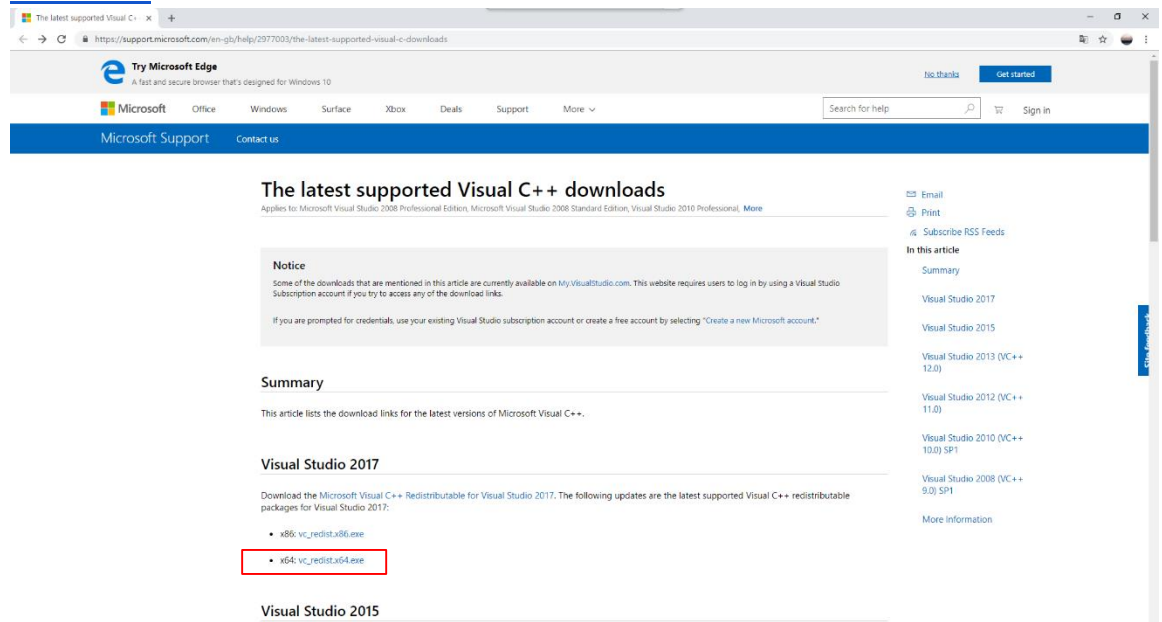
Open command prompt again. Then install numpy using command *pip install numpy*

```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

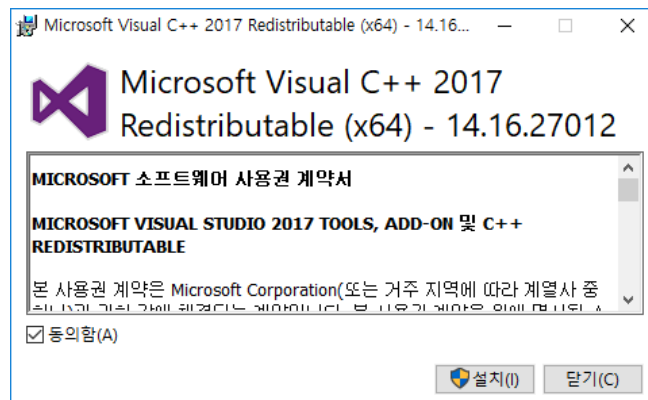
C:\Users\Administrator>pip install numpy
Collecting numpy
  Downloading https://files.pythonhosted.org/packages/51/70/7096a735b27359dbc0c380b23b9c9bd05fea62233f95849c43a6b02c5f40/numpy-1.15.4-cp36-none-win_amd64.whl (13.5MB)
    100% |#####| 13.5MB 25kB/s
Installing collected packages: numpy
Successfully installed numpy-1.15.4
You are using pip version 9.0.1, however version 18.1 is available.
You should consider upgrading via the 'python -m pip install --upgrade pip' command.

C:\Users\Administrator>
```

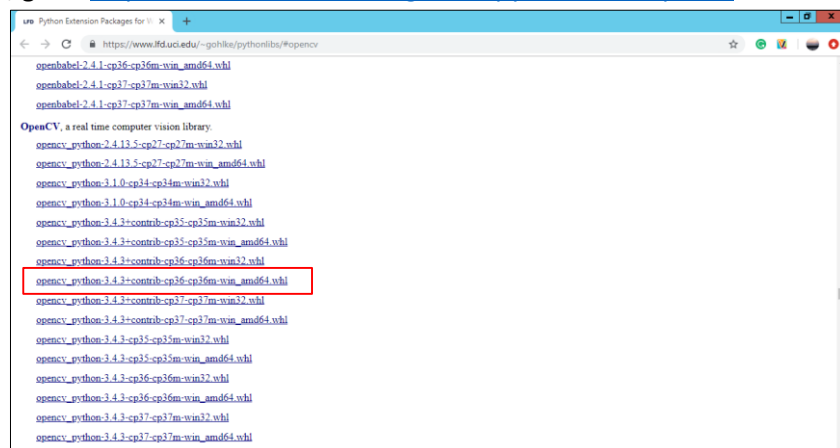
Next, download and install the Microsoft Visual C++ 2017 Redistributable in <https://support.microsoft.com/en-gb/help/2977003/the-latest-supported-visual-c-downloads>. Then install it.



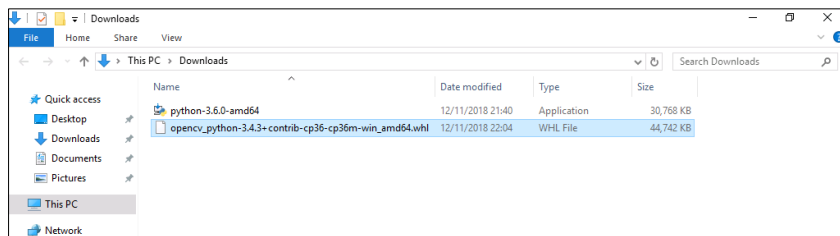
Click next until finish



Afterwards, go to <https://www.lfd.uci.edu/~gohlke/pythonlibs/#opencv>

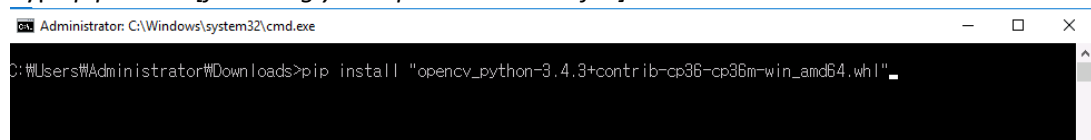


Once you successfully downloaded it, it will appear in your download directory

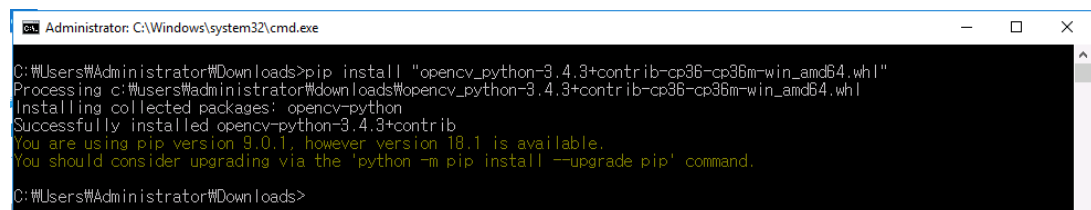


Open CMD in the corresponding directory (containing open-cv installer).

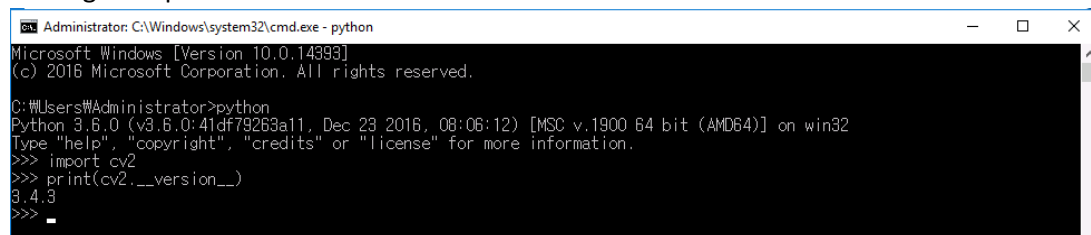
Type *pip install [following your openCV installer file]*



Result



Testing the openCV installation



## C. Installing TensorFlow

1. Go to <https://visualstudio.microsoft.com/vs/older-downloads/>
2. Select Redistributables and Build Tools,
3. Download and install the Microsoft Visual C++ 2015 Redistributable Update 3.
4. Type *pip install --upgrade tensorflow*

```
(venv) C:\>pip install --upgrade tensorflow
Collecting tensorflow
  Using cached https://files.pythonhosted.org/packages/05/cd/c171d2e33c0192b04560ce864c26eba83fed888fe5cd9ded661b2702f2a
e/tensorflow-1.12.0-cp36-cp36m-win_amd64.whl
Collecting grpcio>=1.8.6 (from tensorflow)
  Using cached https://files.pythonhosted.org/packages/f0/90/520757ccafb14f03e8e46a54bacd45f5f9cca6b96b58b83b66a272f059c
f/grpcio-1.16.0-cp36-cp36m-win_amd64.whl
Collecting keras-preprocessing>=1.0.5 (from tensorflow)
  Using cached https://files.pythonhosted.org/packages/fc/94/74e0fa783d3fc07e41715973435dd051ca89c550881b3454233c39c73e6
9/Keras_Preprocessing-1.0.5-py2.py3-none-any.whl
Requirement already satisfied: numpy>=1.13.3 in c:\python36\lib\site-packages (from tensorflow) (1.15.
4)
Collecting six>=1.10.0 (from tensorflow)
  Using cached https://files.pythonhosted.org/packages/67/4b/141a581104b1f6397bfa78ac9d43d8ad29a7ca43ea90a2d863fe3056e86
a/six-1.11.0-py2.py3-none-any.whl
Collecting termcolor>=1.1.0 (from tensorflow)
  Using cached https://files.pythonhosted.org/packages/8a/48/a76be51647d0eb9f10e2a4511bf3fffb8cc1e6b14e9e4fab46173aa79f98
1/termcolor-1.1.0.tar.gz
Collecting tensorboard<1.13.0,>=1.12.0 (from tensorflow)
  Using cached https://files.pythonhosted.org/packages/e0/d0/65fe48383146199f16dbd5999ef226b87bce63ad5cd73c840cf72263796
9/tensorboard-1.12.0-py3-none-any.whl
```

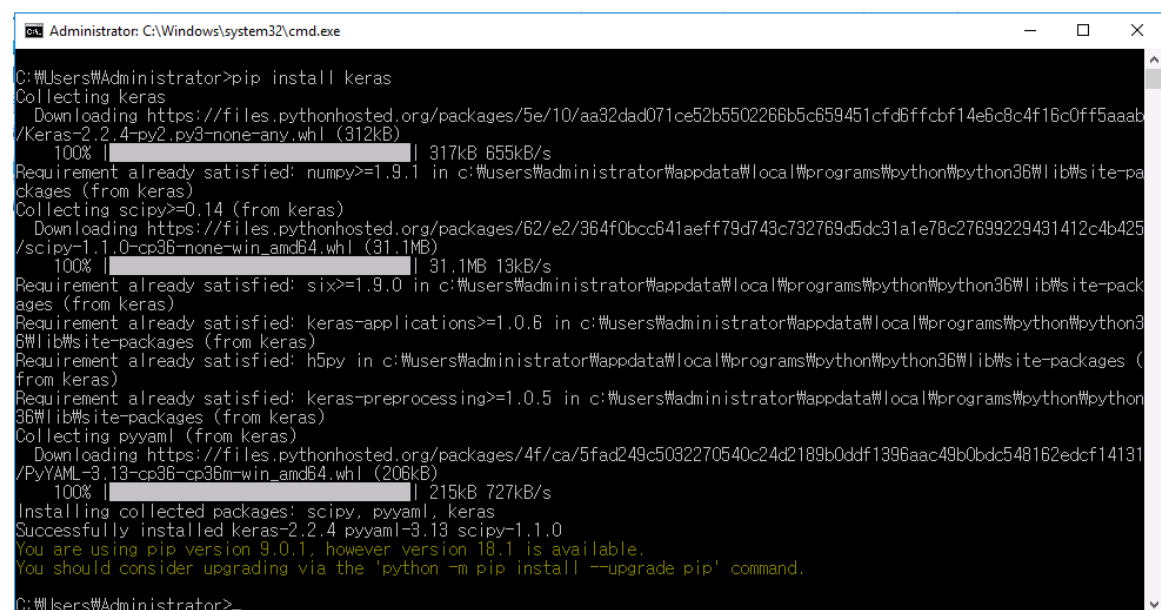
Check your tensorflow installation by typing this command to your command prompt

```
python -c "import tensorflow as tf; tf.enable_eager_execution(); print(tf.reduce_sum(tf.random_normal([1000,
1000])))"
```

if it contains error regarding of protobuf

- pip uninstall protobuf
- pip install protobuf==3.6.0

## D. Installing Keras



```
Administrator: C:\Windows\system32\cmd.exe
C:\Users\Administrator>pip install keras
Collecting keras
  Downloading https://files.pythonhosted.org/packages/5e/10/aa32dad071ce52b5502266b5cb59451cfdbffcbf14e5c8c4f16c0ff5aaab
/Keras-2.2.4-py2.py3-none-any.whl (312kB)
  100% |#####| 317kB 655kB/s
Requirement already satisfied: numpy>=1.9.1 in c:\users\Administrator\AppData\Local\programs\python\python36\lib\site-pa
ckages (from keras)
Collecting scipy>=0.14 (from keras)
  Downloading https://files.pythonhosted.org/packages/62/e2/364f0bcc641aeff79d743c732769d5dc31a1e78c27699229431412c4b425
/scipy-1.1.0-cp36-cp36m-win_amd64.whl (31.1MB)
  100% |#####| 31.1MB 13kB/s
Requirement already satisfied: six>=1.9.0 in c:\users\Administrator\AppData\Local\programs\python\python36\lib\site-pack
ages (from keras)
Requirement already satisfied: keras-applications>=1.0.6 in c:\users\Administrator\AppData\Local\programs\python\python3
6\lib\site-packages (from keras)
Requirement already satisfied: h5py in c:\users\Administrator\AppData\Local\programs\python\python36\lib\site-packages (
from keras)
Requirement already satisfied: keras-preprocessing>=1.0.5 in c:\users\Administrator\AppData\Local\programs\python\python
36\lib\site-packages (from keras)
Collecting pyyaml (from keras)
  Downloading https://files.pythonhosted.org/packages/4f/ca/5fad249c5032270540c24d2189b0ddf1396aac49b0bdc548162edcf14131
/PyYAML-3.13-cp36-cp36m-win_amd64.whl (206kB)
  100% |#####| 215kB 727kB/s
Installing collected packages: scipy, pyyaml, keras
Successfully installed keras-2.2.4 pyyaml-3.13 scipy-1.1.0
You are using pip version 9.0.1, however version 18.1 is available.
You should consider upgrading via the 'python -m pip install --upgrade pip' command.
C:\Users\Administrator>
```



## Installing pandas

```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>pip install pandas
Collecting pandas
  Downloading https://files.pythonhosted.org/packages/0e/67/def5bfaf4d3324fdb89048889ec523c0903c5efab1a64c8dbe0ac8eec13c/pandas-0.23.4-cp36-cp36m-win_amd64.whl (7.7MB)
    100% |#####| 7.7MB 39kB/s
Collecting python-dateutil>=2.5.0 (from pandas)
  Downloading https://files.pythonhosted.org/packages/74/68/d87d9b36af36f44254a8d512cbfc48369103a3b9e474be9bdf536abfc45/python_dateutil-2.7.5-py2.py3-none-any.whl (225kB)
    100% |#####| 235kB 655kB/s
Collecting pytz>=2011k (from pandas)
  Downloading https://files.pythonhosted.org/packages/f8/0e/2365ddc010afb3d79147f1dd544e5ee24bf4ece58ab99b16fbb465ce6dc0/pytz-2018.7-py2.py3-none-any.whl (506kB)
    100% |#####| 512kB 409kB/s
Requirement already satisfied: numpy>=1.9.0 in c:\Users\Administrator\AppData\Local\Programs\Python\Python36\lib\site-packages (from pandas)
Requirement already satisfied: six>=1.5 in c:\Users\Administrator\AppData\Local\Programs\Python\Python36\lib\site-packages (from python-dateutil>=2.5.0->pandas)
Installing collected packages: python-dateutil, pytz, pandas
Successfully installed pandas-0.23.4 python-dateutil-2.7.5 pytz-2018.7
You are using pip version 9.0.1, however version 18.1 is available.
You should consider upgrading via the 'python -m pip install --upgrade pip' command.

C:\Users\Administrator>
```

## Installing scikit-learn

```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>pip install scikit-learn
Collecting scikit-learn
  Downloading https://files.pythonhosted.org/packages/8f/1c/9c1d550068f015685d0fcb1726ace7163bbfe5b1a16bda1dod28d99cb65/scikit_learn-0.20.0-cp36-cp36m-win_amd64.whl (4.7MB)
    100% |#####| 4.8MB 61kB/s
Requirement already satisfied: numpy>=1.8.2 in c:\Users\Administrator\AppData\Local\Programs\Python\Python36\lib\site-packages (from scikit-learn)
Requirement already satisfied: scipy>=0.13.3 in c:\Users\Administrator\AppData\Local\Programs\Python\Python36\lib\site-packages (from scikit-learn)
Installing collected packages: scikit-learn
Successfully installed scikit-learn-0.20.0
You are using pip version 9.0.1, however version 18.1 is available.
You should consider upgrading via the 'python -m pip install --upgrade pip' command.

C:\Users\Administrator>
```

## Installing matplotlib

```
Administrator: C:\Windows\system32\cmd.exe
5/scipy-1.1.0-cp36-none-win_amd64.whl
Requirement already satisfied: numpy>=1.8.2 in c:\python36\lib\site-packages (from scikit-learn) (1.15.4)
Installing collected packages: scipy, scikit-learn
Successfully installed scikit-learn-0.20.0 scipy-1.1.0

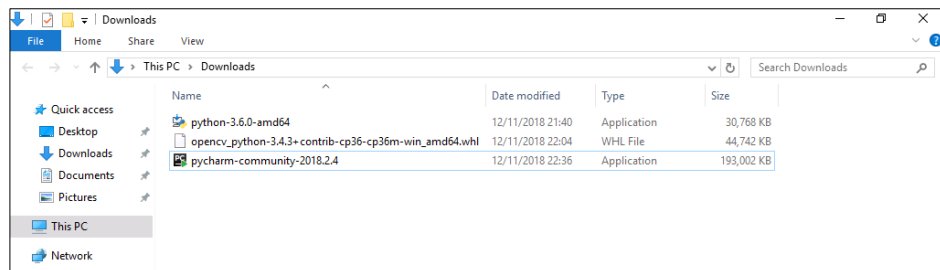
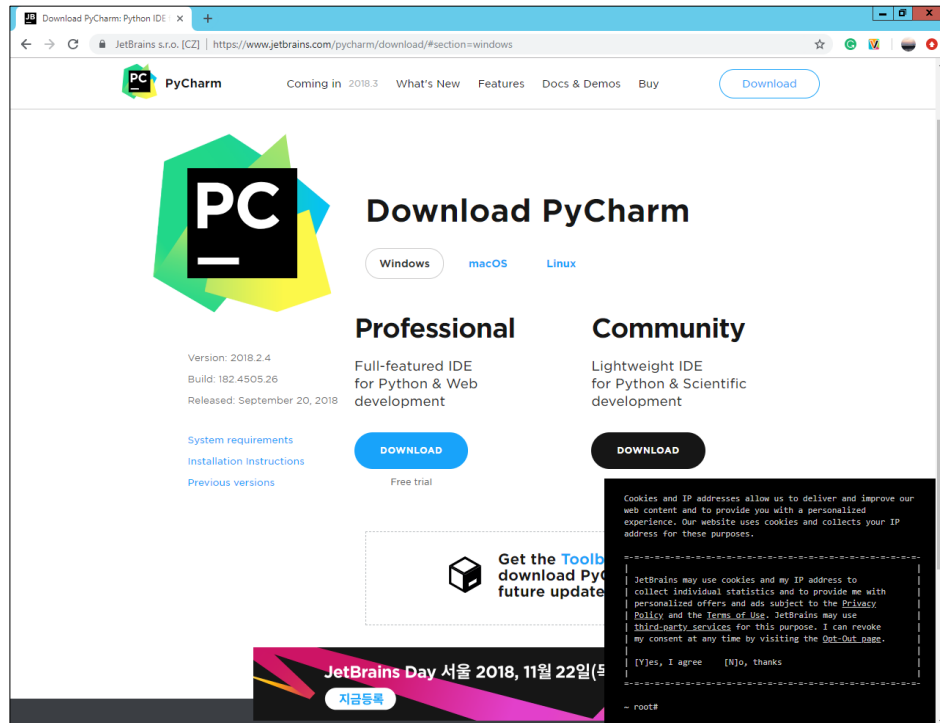
C:\Users\Administrator>pip install matplotlib
Collecting matplotlib
  Using cached https://files.pythonhosted.org/packages/b1/56/569c83515c10146fd0aa09e086816b12e301d0811048e3354a6e9b77ba9a/matplotlib-3.0.2-cp36-cp36m-win_amd64.whl
Requirement already satisfied: numpy>=1.10.0 in c:\python36\lib\site-packages (from matplotlib) (1.15.4)
Collecting pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.1 (from matplotlib)
  Using cached https://files.pythonhosted.org/packages/71/e8/6777f6624681c8b9701a8a0a5654f3eb56919a01a78e12bf3c73f5a3c714/pyparsing-2.3.0-py2.py3-none-any.whl
Collecting kiwisolver>=1.0.1 (from matplotlib)
  Using cached https://files.pythonhosted.org/packages/44/72/16630c3392eba03788ad87949390516bbc488e8e118047a3b824631d21a6/kiwisolver-1.0.1-cp36-none-win_amd64.whl
Collecting python-dateutil>=2.1 (from matplotlib)
  Using cached https://files.pythonhosted.org/packages/74/68/d87d9b36af36f44254a8d512cbfc48369103a3b9e474be9bdf536abfc45/python_dateutil-2.7.5-py2.py3-none-any.whl
Collecting cycler>=0.10 (from matplotlib)
  Using cached https://files.pythonhosted.org/packages/f7/d2/e07d3ebb2bd7af696440ce7e754c59dd546ffe1bbe732c8ab68b9c834e61/cycler-0.10.0-py2.py3-none-any.whl
Requirement already satisfied: setuptools in c:\python36\lib\site-packages (from kiwisolver>=1.0.1->matplotlib) (28.8.0)
Requirement already satisfied: six>=1.5 in c:\python36\lib\site-packages (from python-dateutil>=2.1->matplotlib) (1.11.0)
Installing collected packages: pyparsing, kiwisolver, python-dateutil, cycler, matplotlib
Successfully installed cycler-0.10.0 kiwisolver-1.0.1 matplotlib-3.0.2 pyparsing-2.3.0 python-dateutil-2.7.5

C:\Users\Administrator>
```

## E. Installing Pycharm as python editor

Go to this website <https://www.jetbrains.com/pycharm/download/#section=windows>

And choose PyCharm for community edition



Double click the installer and click next until finish.