

Subject

Computer Vision

Activities in class

Unit I

Digital Image Fundamentals

Session 01

Teacher: Rubén Ferreiroa

Installing OpenCV Using Pip

Installing OpenCV Python using pip is fairly easy. However, there are a few things to keep in mind before we get started.

1. This is a prebuilt CPU-only OpenCV package for Python. You cannot follow these steps if you are on a GPU-powered computer.
2. These are unofficial prebuilt packages for installing OpenCV. They are not official OpenCV packages released by the [OpenCV.org](https://opencv.org) team.
3. It is essential to have Python and pip installed on your Windows machine before you get started. If you do not have Python installed, please download and install the latest version from [here](#).

With all the disclaimers and prerequisites done, let's get started with some installation. Here are four OpenCV packages that are pip-installable on the PyPI repository:

- [opencv-python](#): This repository contains **just the main modules** of the OpenCV library. If you're a PyImageSearch reader, you do not want to install this package.
- [opencv-contrib-python](#): The opencv-contrib-python repository contains both the **main modules along with the contrib modules**. This is the library **we recommend you install**, as it includes all OpenCV functionality.
- [opencv-python-headless](#): Same as opencv-python but no GUI functionality. Useful for headless systems.
- [opencv-contrib-python-headless](#): Same as opencv-contrib-python but no GUI functionality. Useful for headless systems.

You DO NOT want to install both opencv-python and opencv-contrib-python. Pick ONE of them.

Step 1: Make sure you have python and pip installed. Pip version 19.3 is the minimum supported version. This means a pip with a version higher than 19.3 is required.

To check the pip version, open your command prompt and type:



```
$ pip -V
```

This will let you know the version of pip you are using. To upgrade pip to the latest version type:

```
$ pip install --upgrade pip
```

Step 2 (optional): Create a virtual environment and install OpenCV there. Creating a virtual environment in Python is a very good practice, and we highly recommend it.

You can develop multiple projects without worrying if your libraries are going to crash with each other. This can be achieved through **virtualenv** and **virtualenvwrapper** as well as Anaconda. In this tutorial, we will use virtualenv and virtualenvwrapper.

```
$ pip install virtualenv virtualenvwrapper
```

```
$ pip install virtualenvwrapper-win
```

- You'll see some terminal output that sets up

virtualenvwrapper

. You now have access to new terminal commands:

- Create an environment with **mkvirtualenv**
- Activate an environment (or switch to a different one) with **workon**
- Deactivate an environment with **deactivate**
- Remove an environment with **rmvirtualenv**

[Read the documentation](#) to get familiar with the commands.

Next, create a virtual environment called cv (you can name it anything you want) to install OpenCV.

```
$ mkvirtualenv cv -p python3
```

Switch to this environment using:

```
$ workon cv
```

Step 3: With everything taken care of, we finally start installing OpenCV on your Windows system.

```
$ pip install opencv-contrib-python
```

To check if OpenCV is installed properly, open a new command prompt and enter a Python shell using the following command:

```
$ python
```

```
>> import cv2
```

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

And that's it. OpenCV is successfully installed on your windows machine. You are ready to embark on your Computer Vision journey.

We recommend you go through some of our tutorials on OpenCV fundamentals to get yourself acquainted with the topic.

Summary

In this tutorial, we learned how to install OpenCV from prebuilt binaries. We also learned which package to install and how to create a virtual environment for working on the package. For all purposes of learning computer vision using Python, we highly recommend installing opencv-contrib-python using prebuilt binaries.

Resources

<https://www.youtube.com/watch?v=LRyoSwgLkH4>