

Install Anaconda

Build Python virtual environment with Anaconda (Python distribution and management platform) to manage packages and different version of Python. You can use pip (package manager for Python) in Anaconda virtual environment. The latest version Anaconda <https://www.anaconda.com/products/individual>

We are using Anaconda 2019.07 version. Anaconda 2019.07 with Python 3.6

<https://docs.anaconda.com/anaconda/packages/oldpkglists/>

Packages included in Anaconda 2019.07 for 64-bit Linux with Python 3.6 (HL 2021-4-5)

<https://repo.anaconda.com/archive/>

1. Download Anaconda installer and run the installer

`bash Anaconda3-2019.07-Linux-x86_64.sh` (choose location [/home/anaconda2])

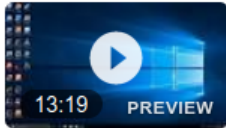
<https://phoenixnap.com/kb/how-to-install-anaconda-ubuntu-18-04-or-20-04>

PyCharm IDE with Anaconda

Anaconda and JetBrains are working together to bring you Anaconda-powered environments tightly integrated in the PyCharm IDE.

PyCharm for Anaconda is available at: <https://www.anaconda.com/pycharm>

How to setup an Anaconda environment in PyCharm IDE <https://www.youtube.com/watch?v=Cabk72CQHBC>



[How to setup an Anaconda environment in PyCharm IDE](https://www.youtube.com/watch?v=Cabk72CQHBC)

YouTube · Namas Bhandari
Aug 29, 2019

Create Virtual Environment Config File .yaml

Create `cti-deepleaning-36.yaml` which contains the following contents:

```
name: deepleaning_36
```

```
channels:
```

- <https://conda.anaconda.org/menpo>
- conda-forge

```
dependencies:
```

- python==3.6.9
- opencv==4.2.0
- pandas
- numpy

Import .yaml to Create A Virtual Environment

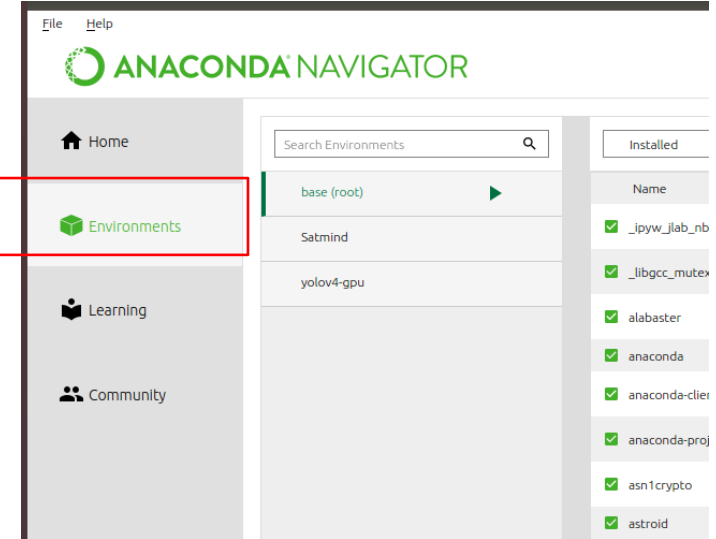
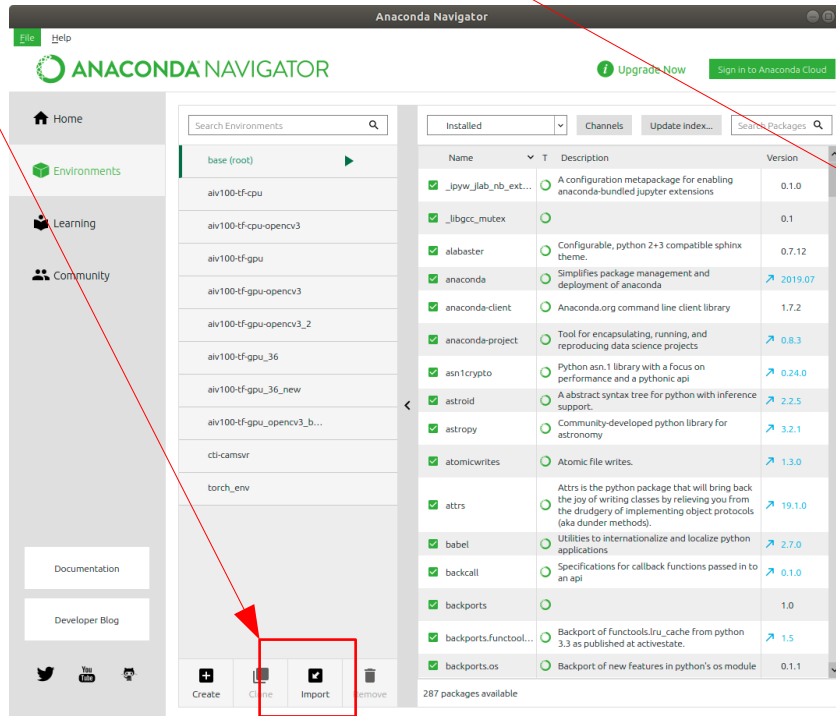
1. Run Anaconda Navigator on a terminal

\$anaconda-navigator

2. Click 'Environments' on left-hand side menu

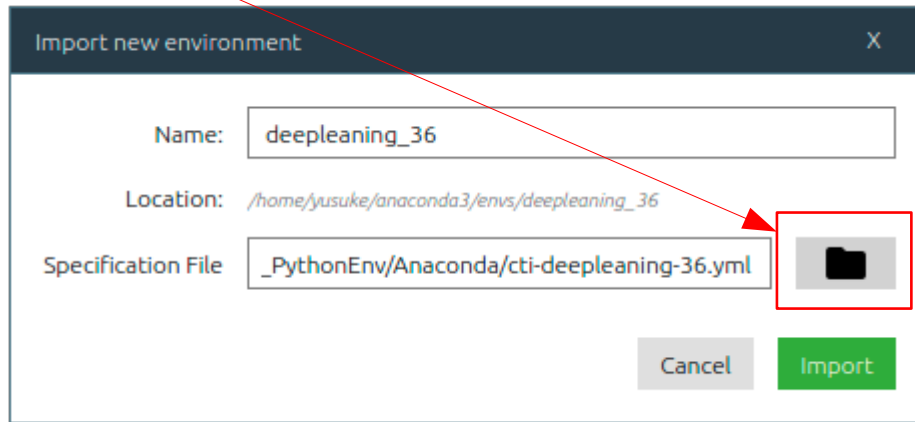
3. Click 'Import'

```
harry@workstation: ~/anaconda2
File Edit View Search Terminal Help
(base) harry@workstation:~/anaconda2$ anaconda-navigator
/home/harry/anaconda2/lib/python2.7/site-packages/anaconda_navigator/api/conda_a
pi.py:1364: YAMLLoadWarning: calling yaml.load() without Loader=... is deprecate
d, as the default Loader is unsafe. Please read https://msg.pyyaml.org/load for
full details.
data = yaml.load(f)
```



Import .yaml to Create Python Conda Virtual Environment

4. Click the icon to choose cti-deeplearning-36.yaml




Import new environment

Name:

Location:

Specification File



5. Click the Import button

Start downloading and installing the needed packages defined in .yaml config file.

Create Simple OpenCV Program

1. Create CannyEdge.py code;

```
import numpy as np
import cv2
# Capture video from local camera or USB camera
cap = cv2.VideoCapture(0)
ret, frame = cap.read()
gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)

while True:

    ret, frame = cap.read()

    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
    edges = cv2.Canny(gray, 100, 200)

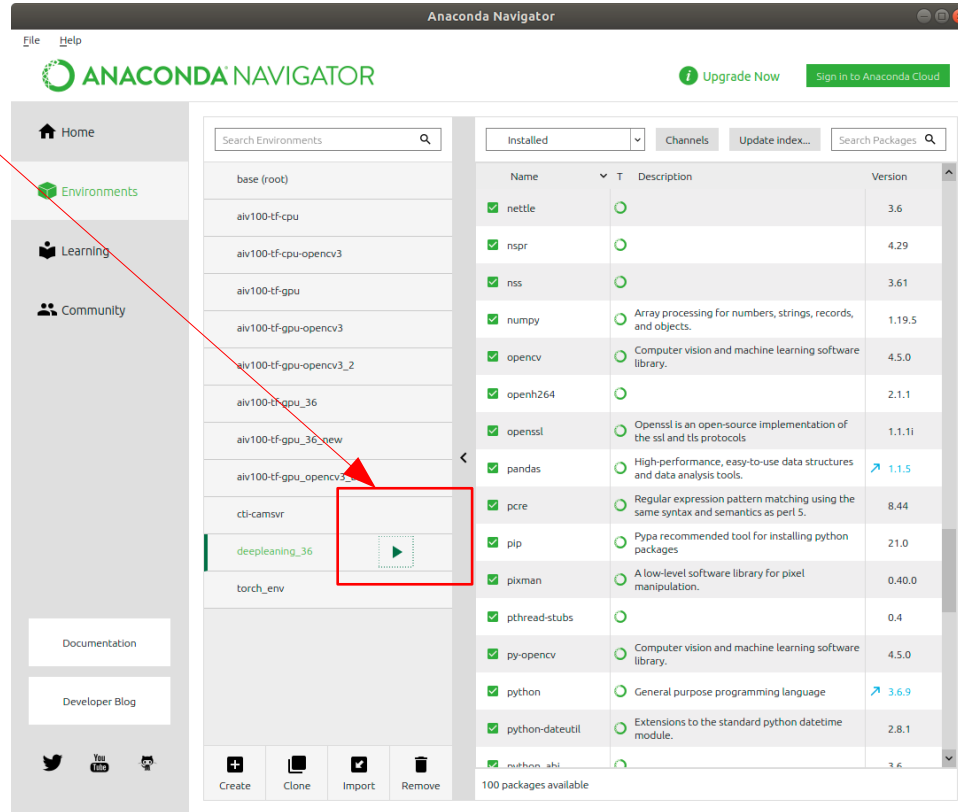
    cv2.imshow('original', frame)
    cv2.imshow('gray scale', gray)
    cv2.imshow('Canny edges', edges)

    if cv2.waitKey(1) & 0xFF == ord('q'):
        break

cap.release()
cv2.destroyAllWindows()
```

Run Python Programs

1. Click deeplearning_36 and select 'Open Terminal'



The screenshot shows the Anaconda Navigator application window. The 'Environments' tab is active, displaying a list of environments. The environment 'deeplearning_36' is selected, and a red box highlights the 'Open Terminal' button (a play icon) next to it. A red arrow points from the text '1. Click deeplearning_36 and select 'Open Terminal'' to this button.

Name	T	Description	Version
nettle	✓		3.6
nspr	✓		4.29
nss	✓		3.61
numpy	✓	Array processing for numbers, strings, records, and objects.	1.19.5
opencv	✓	Computer vision and machine learning software library.	4.5.0
openh264	✓		2.1.1
openssl	✓	OpenSSL is an open-source implementation of the ssl and tls protocols	1.1.1i
pandas	✓	High-performance, easy-to-use data structures and data analysis tools.	1.1.5
pcr	✓	Regular expression pattern matching using the same syntax and semantics as perl 5.	8.44
pip	✓	Pypa recommended tool for installing python packages	21.0
pixman	✓	A low-level software library for pixel manipulation.	0.40.0
pthread-stubs	✓		0.4
py-opencv	✓	Computer vision and machine learning software library.	4.5.0
python	✓	General purpose programming language	3.6.9
python-dateutil	✓	Extensions to the standard python datetime module.	2.8.1
python_ah1	✓		3.6

100 packages available

Run Python Programs (2)

2. Change to the directory where CannyEdge.py is located
3. Run CannyEdge.py
`python CannyEdge.py`

CannyEdge.py uses a local camera therefore if you can not use the local camera for the zoom video session at the same time. If you do, then it causes an error.

Command Line To Activate Virtual Environment

You can activate virtual environment by command line input on the terminal:

```
$ conda activate deeplearning_36
```