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])

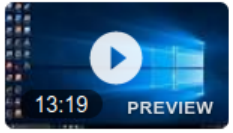
https://phoenixnap.com/kb/how-to-install-anaconda-ubuntu-18-04-or-20-04

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

YouTube · Namas Bhandari
Aug 29, 2019

Create Virtual Environment Config File .yml

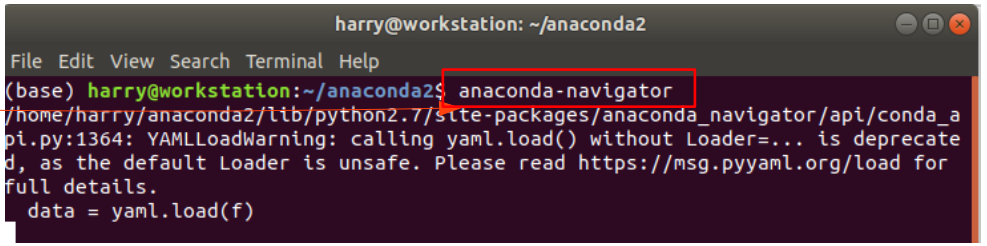
Create cti-deepleaning-36.yml which contains the following contents:

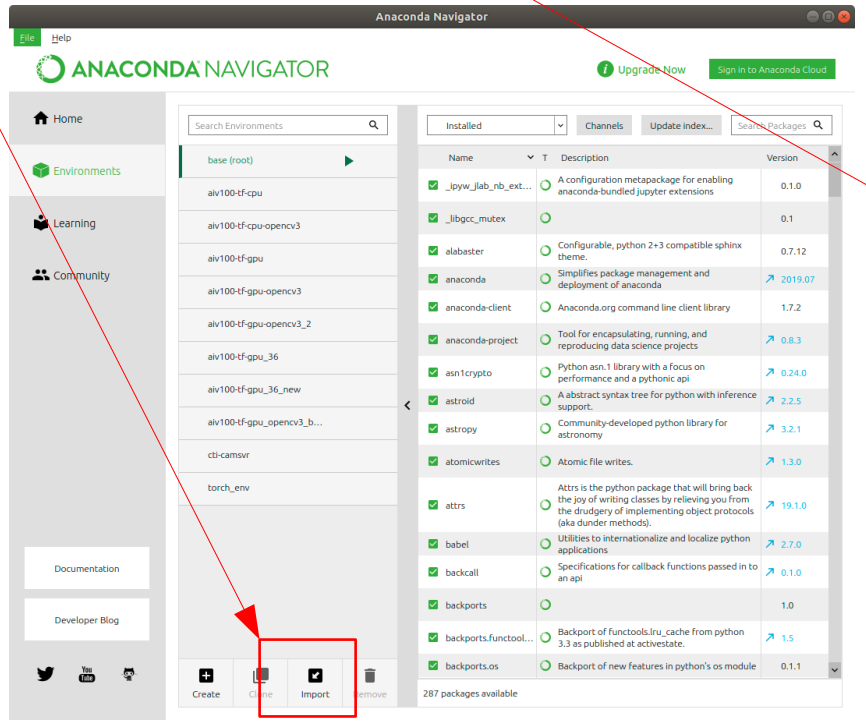
```
name: deepleaning_36
channels:
    - https://conda.anaconda.org/menpo
    - conda-forge
dependencies:
    - python==3.6.9
    - opencv==4.2.0
    - pandas
    - numpy
```

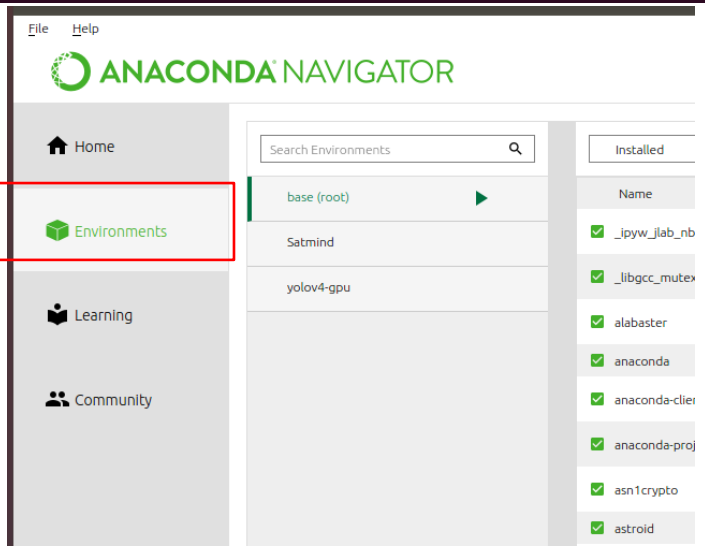
Import .yml to Create A Virtual Environment

1. Run Anaconda Navigator on a terminal
   $anaconda-navigator

2. Click ‘Environments’ on left-hand side menu
3. Click ‘Import’

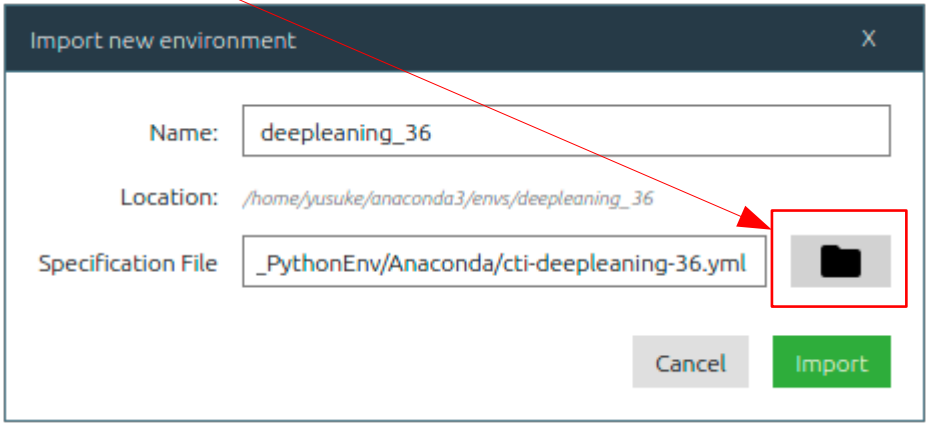






Import .yml to Create Python Conda Virtual Environment

4. Click the icon to choose cti-deepleaning-36.yml



5. Click the Import button

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

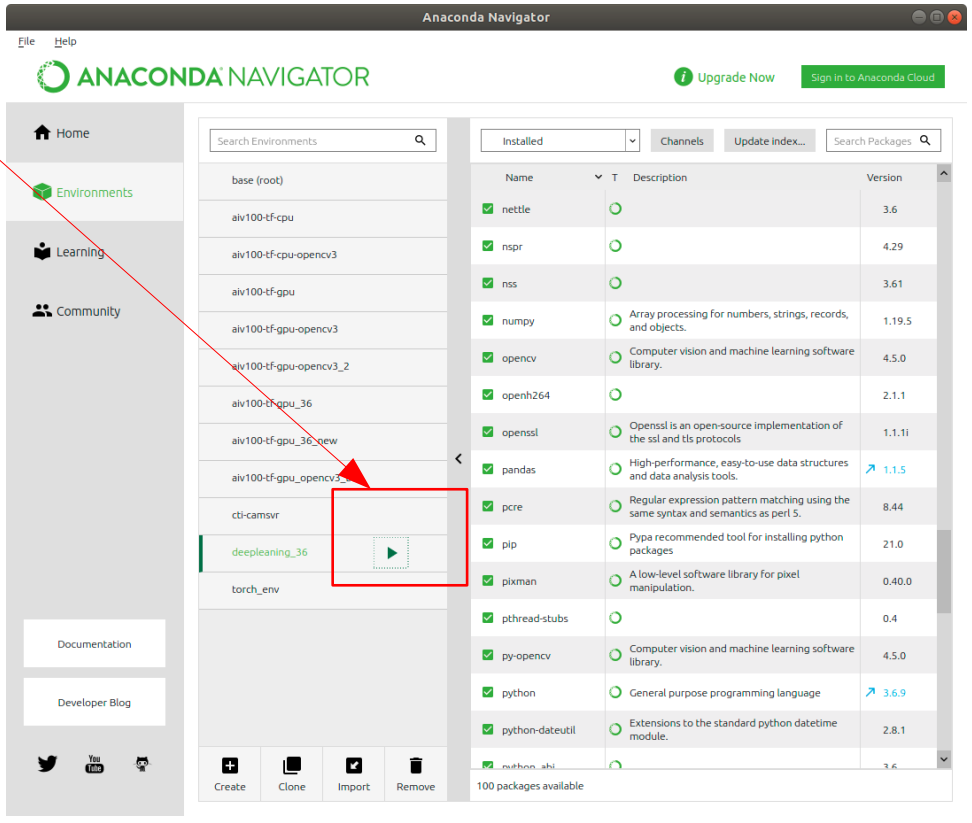
Create Simple OpenCV Program

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 deepleaning_36 and select ‘Open Terminal’



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 deepleaning_36
```