1.安装torch

先使用nvidia-smi查看可以安装cuda的最高版本


```
C:\Users\xjtu>nvidia-smi
Wed Dec  6 11:03:29 2023
+-----------------------------------------------------------------------------+
| NVIDIA-SMI 536.99       Driver Version: 536.99       CUDA Version: 12.2      |
|-------------------------------+----------------------+----------------------+
| GPU  Name            TCC/WDDM | Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp  Perf  Pwr:Usage/Cap|         Memory-Usage | GPU-Util  Compute M. |
|                               |                      |               MIG M. |
|===============================+======================+======================|
|   0  NVIDIA GeForce GTX 1050 Ti  WDDM | 00000000:01:00.0  On |                  N/A |
| 23%   33C    P8    N/A /  80W |    279MiB /  4096MiB |      1%      Default |
|                               |                      |                  N/A |
+-------------------------------+----------------------+----------------------+

+-----------------------------------------------------------------------------+
| Processes:                                                                  |
|  GPU   GI   CI        PID   Type   Process name                  GPU Memory |
|        ID   ID                                                   Usage      |
|=============================================================================|
|    0   N/A  N/A      2864    C+G   ...t.LockApp_cw5n1h2txyewy\LockApp.exe    N/A |
|    0   N/A  N/A      4152    C+G   ...CBS_cw5n1h2txyewy\TextInputHost.exe    N/A |
|    0   N/A  N/A      4464    C+G   ...orkSpace\SoftWare\Typora\Typora.exe    N/A |
|    0   N/A  N/A      5956    C+G   ...Space\SoftWareDownload\Snipaste.exe    N/A |
|    0   N/A  N/A      8024    C+G   C:\Windows\explorer.exe                   N/A |
|    0   N/A  N/A      9088    C+G   ...1.0_x64__8wekyb3d8bbwe\Video.UI.exe    N/A |
|    0   N/A  N/A     10864    C+G   ...crosoft\Edge\Application\msedge.exe    N/A |
|    0   N/A  N/A     11196    C+G   ...ekyb3d8bbwe\PhoneExperienceHost.exe    N/A |
```

打开pytorch官网，这里选择安装cuda11.7的pytorch，找到之前的版本的

可以使用pip安装

Wheel

OSX

```
pip install torch==1.13.0 torchvision==0.14.0 torchaudio==0.13.0
```

Linux and Windows

```
# ROCM 5.2 (Linux only)
pip install torch==1.13.0+rocm5.2 torchvision==0.14.0+rocm5.2 torchaudio==0.13.0 --extra-index-url https://d
# CUDA 11.6
pip install torch==1.13.0+cu116 torchvision==0.14.0+cu116 torchaudio==0.13.0 --extra-index-url https://downl
# CUDA 11.7
pip install torch==1.13.0+cu117 torchvision==0.14.0+cu117 torchaudio==0.13.0 --extra-index-url https://downl
# CPU only
pip install torch==1.13.0+cpu torchvision==0.14.0+cpu torchaudio==0.13.0 --extra-index-url https://download.
```

```
# ROCM 5.2 (Linux only)
pip install torch==1.13.0+rocm5.2 torchvision==0.14.0+rocm5.2 torchaudio==0.13.0
--extra-index-url https://download.pytorch.org/whl/rocm5.2
# CUDA 11.6
pip install torch==1.13.0+cu116 torchvision==0.14.0+cu116 torchaudio==0.13.0 --
extra-index-url https://download.pytorch.org/whl/cu116
# CUDA 11.7
pip install torch==1.13.0+cu117 torchvision==0.14.0+cu117 torchaudio==0.13.0 --
extra-index-url https://download.pytorch.org/whl/cu117
# CPU only
pip install torch==1.13.0+cpu torchvision==0.14.0+cpu torchaudio==0.13.0 --extra-
index-url https://download.pytorch.org/whl/cpu
```

2.安装CUDA

搜索cuda11.7

网页   图片   视频   学术   词典   地图   ⋮ 更多   工具

约 58,100,000 个结果

NVIDIA Developer
https://developer.nvidia.com/cuda-11-7-0-download-archive ▾

CUDA Toolkit 11.7 Downloads | NVIDIA Developer

网页 Download the CUDA Toolkit 11.7 for your target platform from the official NVIDIA archive. The CUDA Toolkit 11.7 supports the latest features and functions of the CUDA ...

进一步探索

◉ CUDA Toolkit 11.7 Update 1 Downloads | NVIDIA Developer	developer.nvidia.com
◉ CUDA Toolkit 11.8 New Features Revealed | NVIDIA ...	developer.nvidia.com
S NVIDIA CUDA Toolkit - Download & Review - softpedia	softpedia.com
17 Install CUDA 11.2, cuDNN 8.1.0, PyTorch v1.8.0 (or v1.9.0 ... - ...	medium.com
◎ CUDA Installation Guide for Linux - NVIDIA Docs	docs.nvidia.com

根据热度为您推荐·反馈

进入CUDA，加载的时间优点长

然后选择cuda11.7 linux 对应ubuntu版本的，根据命令行下载即可

```
https://developer.nvidia.com/cuda-11-7-0-download-archive?
target_os=Linux&target_arch=x86_64&Distribution=Ubuntu&target_version=20.04&target_type=deb_local
```

CUDA Toolkit 11.7 Downloads

Select Target Platform

Click on the green buttons that describe your target platform. Only supported platforms will be shown. By downloading and using the software, you agree to fully comply with the terms and conditions of the CUDA EULA.

Operating System	Linux	Windows						
Architecture	x86_64	ppc64le	arm64-sbsa					
Distribution	CentOS	Debian	Fedora	OpenSUSE	RHEL	Rocky	SLES	Ubuntu	WSL-Ubuntu
Version	18.04	20.04	22.04					
Installer Type	deb (local)	deb (network)	runfile (local)					

Download Installer for Linux Ubuntu 20.04 x86_64

The base installer is available for download below.

> Base Installer

Installation Instructions:

根据下面的命令进行安装即可

```
wget
https://developer.download.nvidia.com/compute/cuda/repos/ubuntu2004/x86_64/cuda-
ubuntu2004.pin
sudo mv cuda-ubuntu2004.pin /etc/apt/preferences.d/cuda-repository-pin-600
wget
https://developer.download.nvidia.com/compute/cuda/11.7.0/local_installers/cuda-
repo-ubuntu2004-11-7-local_11.7.0-515.43.04-1_amd64.deb
sudo dpkg -i cuda-repo-ubuntu2004-11-7-local_11.7.0-515.43.04-1_amd64.deb
sudo cp /var/cuda-repo-ubuntu2004-11-7-local/cuda-*-keyring.gpg
/usr/share/keyrings/
sudo apt-get update
sudo apt-get -y install cuda
```

3.下载cudnn

搜索cudnn，然后进行下载和安装，首先要进行邮箱注册和验证

选择这个画红线的安装

For more information, refer to the cuDNN Developer Guide, Installation Guide and Release Notes on the Deep Learning SDK Documentation web page.

Download cuDNN v8.9.7 (December 5th, 2023), for CUDA 12.x

Download cuDNN v8.9.7 (December 5th, 2023), for CUDA 11.x

Local Installers for Windows and Linux, Ubuntu(x86_64, armsbsa)

Local Installer for Windows (Zip)

Local Installer for Linux x86_64 (Tar)

Local Installer for Linux PPC (Tar)

Local Installer for Linux SBSA (Tar)

Local Installer for Debian 11 (Deb)

Local Installer for Ubuntu18.04 x86_64 (Deb)

Local Installer for Ubuntu20.04 x86_64 (Deb)

Local Installer for Ubuntu22.04 x86_64 (Deb)

Local Installer for Ubuntu20.04 aarch64sbsa (Deb)

Local Installer for Ubuntu22.04 aarch64sbsa (Deb)

Local Installer for Ubuntu20.04 cross-sbsa (Deb)

Local Installer for Ubuntu22.04 cross-sbsa (Deb)

Local Installers for Red Hat (x86_64, armsbsa, Power architecture)

Local Installer for RedHat/Centos 7.1 x86_64 (RPM)

Local Installer for RedHat/Centos 8.1 x86_64 (RPM)

Local Installer for RedHat/Centos 8.1 aarch64sbsa (RPM)

Local Installer for RedHat/Centos 8.1 PPC (RPM)

下载以后会得到一个安装包，然后进行解压

在解压得到的目录进行复制

```
sudo cp cudnn-*-archive/include/cudnn*.h /usr/local/cuda/include
sudo cp cudnn-*-archive/lib/libcudnn* /usr/local/cuda/lib64
sudo chmod a+r /usr/local/cuda/include/cudnn*.h /usr/local/cuda/lib64/libcudnn*
```

4.验证安装

```
import torch
print(torch.__version__)
print(torch.cuda.is_available())
```

如果返回True，说明安装成功