

01 动手学习深度学习-配置环境pytorch

一、需要的配置以及准备

- 学习环境: windows10 + anaconda + python3.7 + jupyter notebook + cuda + cudnn
- GPU版本: CUDA (11.6) + cudnn(相应cuda版本)

二、安装anaconda

参考: https://blog.csdn.net/qq_44653420/article/details/122111441?spm=1001.2014.3001.5502

检查conda的版本: `conda --version`

切换anconda的镜像源: 切换国内清华的镜像源

```
conda config --add channels
https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/free/

conda config --add channels
http://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/main/

conda config --set show_channel_urls yes
```

设置搜索时显示通道的地址:

```
conda config --set show_channel_urls yes
```

显示源:

```
conda config --show channels
```

删除源:

```
conda config --remove channels 源名称或者链接
```

二、安装CUDA:

先检查显卡驱动：cmd命令行输入nvidia-smi 找到对应的cuda版本。

```
Thu Mar 31 20:13:00 2022
```

NVIDIA-SMI 512.15				Driver Version: 512.15		CUDA Version: 11.6		
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 ...	WDDM	00000000:01:00.0	Off			N/A	
N/A	38C	P8	N/A / N/A	0MiB / 4096MiB	0%	Default	N/A	

Processes:						
GPU	GI	CI	PID	Type	Process name	GPU Memory Usage
	ID	ID				
No running processes found						

cuda下载地址：<https://developer.nvidia.com/cuda-toolkit-archive> 安装可以选择别的路径，安装之后，输入nvcc -V检查安装情况

测试cuda是否安装成功：nvcc -V

```
C:\Users\LuZhouShiLi>nvcc -V
nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2021 NVIDIA Corporation
Built on Fri_Dec_17_18:28:54_Pacific_Standard_Time_2021
Cuda compilation tools, release 11.6, V11.6.55
Build cuda_11.6.r11.6/compiler.30794723_0
```

三、安装CUDNN

需要先注册才可以下载，（可以使用微信登录），下载解压之后，做如下操作：

- 将cudnn\bin目录中的 cudnn64_8.dll 复制到 C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v11.2\bin 中
- 将cudnn\include目录中的 cudnn.h 复制到 C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v11.2\include中
- 将cudnn\lib\x64 目录中的 cudnn.lib 复制到 C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v11.2\lib\x64 中
- 环境变量已经自动添加过

四、安装pytorch

1. 新建一个conda环境

- 在anaconda prompt中使用以下命令检查已经存在的conda环境：conda info -e
- 创建一个虚拟环境：conda create -name 名称 python=3.7
- 激活环境：conda activate 名称
- 退出环境：conda deactivate 名称

2. 安装pytorch

官网<https://pytorch.org/> 复制如下命令，在刚才新建的环境中输入：`conda install pytorch torchvision torchaudio cudatoolkit=11.3 -c pytorch`

PyTorch Build	Stable (1.11.0)		Preview (Nightly)		LTS (1.8.2)		
Your OS	Linux		Mac		Windows		
Package	Conda		Pip		LibTorch		Source
Language	Python				C++ / Java		
Compute Platform	CUDA 10.2		CUDA 11.3		ROCm 4.2 (beta)		CPU
Run this Command:	conda install pytorch torchvision torchaudio cudatoolkit=11.3 -c pytorch						

3. 测试pytorch的安装 命令行中，先输入python,转到python解释器环境中

```
import torch
from __future__ import print_function
x = torch.rand(5,3)
print(x)
torch.cuda.is_available() # 测试CUDA是否可用
```

参考李沐老师的视频讲解[https://www.bilibili.com/video/BV18K411w7Vs?](https://www.bilibili.com/video/BV18K411w7Vs?spm_id_from=333.1007.top_right_bar_window_history.content.click)

五、安装jupyter notebook

打开动手学习深度学习网页下载压缩包：<http://zh.d2l.ai/>


选择一个位置解压压缩包。

然后安装需要的包：`pip install jupyter d2l`

安装完毕之后，到刚才解压d2l文件夹下面打开anaconda prompt 输入jupyter notebook

```
(base) C:\Users\LuZhouShiLi>conda activate xiaxuefei
(xiaxuefei) C:\Users\LuZhouShiLi>d:
(xiaxuefei) D:\>cd d2l
(xiaxuefei) D:\d2l>jupyter notebook
[I 20:57:55.784 NotebookApp] Serving notebooks from local directory: D:\d2l
[I 20:57:55.784 NotebookApp] Jupyter Notebook 6.4.10 is running at:
[I 20:57:55.784 NotebookApp] http://localhost:8888/?token=92043020d2699ed33e8bb4df88e09ccd921c2b40b58b4f91
[I 20:57:55.784 NotebookApp] or http://127.0.0.1:8888/?token=92043020d2699ed33e8bb4df88e09ccd921c2b40b58b4f91
[I 20:57:55.785 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 20:57:55.890 NotebookApp]

To access the notebook, open this file in a browser:
file:///C:/Users/LuZhouShiLi/AppData/Roaming/jupyter/runtime/nbserver-12988-open.html
Or copy and paste one of these URLs:
http://localhost:8888/?token=92043020d2699ed33e8bb4df88e09ccd921c2b40b58b4f91
or http://127.0.0.1:8888/?token=92043020d2699ed33e8bb4df88e09ccd921c2b40b58b4f91
[W 20:58:05.652 NotebookApp] 404 GET /api/kernels/59c040a0-86f1-40e0-a778-b7333e64d336/channels?session_id=edd78a2281a94454a20c2a008420b6c9 (::1): Kernel does not exist: 59c040a0-86f1-40e0-a778-b7333e64d336
[W 20:58:05.807 NotebookApp] 404 GET /api/kernels/59c040a0-86f1-40e0-a778-b7333e64d336/channels?session_id=edd78a2281a94454a20c2a008420b6c9 (::1) 156.580000ms referer=None
[I 20:58:49.129 NotebookApp] 302 GET /?token=92043020d2699ed33e8bb4df88e09ccd921c2b40b58b4f91 (::1) 1.000000ms
```



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FilesRunningClusters

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<input type="checkbox"/>			mxnet		16 天前	
<input type="checkbox"/>			pytorch		16 天前	
<input type="checkbox"/>			tensorflow		16 天前	
<input type="checkbox"/>			d2l-zh.zip		2 小时前	93.2 MB

进入pytorch，可以运行书中的一些代码。