

小车课程训练环境配置

环境配置

conda的安装

已经安装了Miniconda或者Anaconda的同学可以跳过本节

conda 是一个开源的包、环境管理器，可以用于在同一个机器上安装不同版本的软件包及其依赖，并能够在不同的环境之间切换。推荐使用conda来完成本次的实验

Windows下的安装

1. 打开 [Index of /anaconda/miniconda/ | 清华大学开源软件镜像站 | Tsinghua Open Source Mirror](#)找到windows下最新版本的miniconda

`Miniconda3-latest-Windows-x86_64.exe` ←

`Miniconda3-latest-MacOSX-x86_64.sh`

`Miniconda3-latest-MacOSX-x86_64.pkg`

`Miniconda3-latest-MacOSX-arm64.sh`

`Miniconda3-latest-Linux-s390x.sh`

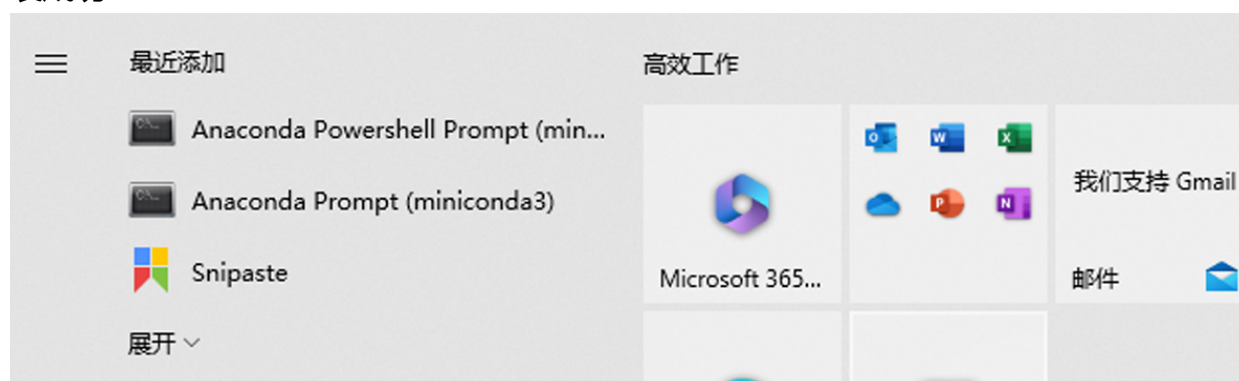
`Miniconda3-latest-MacOSX-arm64.pkg`

`Miniconda3-latest-Linux-ppc64le.sh`

`Miniconda3-latest-Linux-aarch64.sh`

`Miniconda3-latest-Linux-x86_64.sh`

2. 下载程序后打开，选好安装目录后，一路next，保持默认选项安装即可（注意勾选add path）
3. 安装完成后在开始菜单可以看到Anaconda Powershell Prompt和Anaconda Prompt即安装成功



Linux or Mac OS下的安装

按步骤输入如下命令行即可:

- for Mac OS

```
cd ~  
# 下载安装脚本  
wget https://mirrors.tuna.tsinghua.edu.cn/anaconda/miniconda/Miniconda3-latest-MacOSX-x86_64.sh  
# 修改文件权限，使得可以运行  
chmod u+x Miniconda3-latest-MacOSX-x86_64.sh  
# 运行安装脚本，根据提示完成安装  
./Miniconda3-latest-MacOSX-x86_64.sh
```

- for Linux

```
cd ~  
# 下载安装脚本  
wget https://mirrors.tuna.tsinghua.edu.cn/anaconda/miniconda/Miniconda3-latest-Linux-x86_64.sh  
# 修改文件权限，使得可以运行  
chmod u+x Miniconda3-latest-Linux-x86_64.sh  
# 运行安装脚本，根据提示完成安装  
./Miniconda3-latest-Linux-x86_64.sh
```

终端中显示如下即为安装成功（base环境可以通过重启终端或输入 `source ~/.bashrc` 调出）

```
Installing base environment...

Downloading and Extracting Packages

Downloading and Extracting Packages

Preparing transaction: done
Executing transaction: done
installation finished.
Do you wish the installer to initialize Miniconda3
by running conda init? [yes|no]
[no] >>> yes
no change      /home/hfeng/miniconda3/condabin/conda
no change      /home/hfeng/miniconda3/bin/conda
no change      /home/hfeng/miniconda3/bin/conda-env
no change      /home/hfeng/miniconda3/bin/activate
no change      /home/hfeng/miniconda3/bin/deactivate
no change      /home/hfeng/miniconda3/etc/profile.d/conda.sh
no change      /home/hfeng/miniconda3/etc/fish/conf.d/conda.fish
no change      /home/hfeng/miniconda3/shell/condabin/Conda.psm1
no change      /home/hfeng/miniconda3/shell/condabin/conda-hook.ps1
no change      /home/hfeng/miniconda3/lib/python3.9/site-packages/xontrib/conda.xsh
no change      /home/hfeng/miniconda3/etc/profile.d/conda.csh
modified       /home/hfeng/.bashrc

==> For changes to take effect, close and re-open your current shell. <==

If you'd prefer that conda's base environment not be activated on startup,
    set the auto_activate_base parameter to false:

conda config --set auto_activate_base false

Thank you for installing Miniconda3!
hfeng@hfeng-virtual-machine:~$ source ~/.bashrc
(base) hfeng@hfeng-virtual-machine:~$
```

python包安装

打开终端(Windows系统打开Anaconda Powershell Prompt)，按照步骤输入如下命令行即可完成环境搭建

```
### 小车标志牌识别训练环境搭建

conda create -n car python=3.10 -y

conda activate car

### 如果下载太慢可以加上 -i https://pypi.tuna.tsinghua.edu.cn/simple
pip install -r requirements.txt

### requirements.txt的内容（包含了需要的安装包）
opencv-python
numpy
```

```
torch
torchvision
Pillow
pandas
scipy
```

如果需要安装GPU版本的torch，由于不同的系统、不同的显卡驱动版本存在较多差异，需要同学们自行探索，对于本实验来说，由于搭建的神经网络比较简单，cpu即可完成训练，上述安装方式已经足够满足需求。

下面给出一些链接和帮助文档，同学们可自行阅读

<https://pytorch.org/get-started/previous-versions/>

<https://pytorch.org/tutorials/>

祝同学们实验顺利！