西安电子科技大学 | 杭州研究院
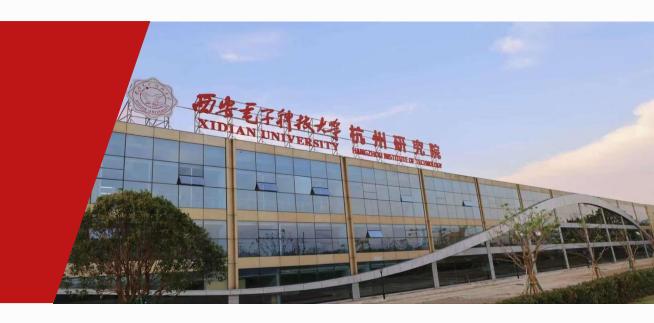XIDIAN UNIVERSITY | Hangzhou Institute of Technology

高性能计算实验作业

2024年4月

清空当前环境的所有软件模块，然后加载特定版本的编译器、MPI并行计算库和AMD GPU开发工具包

module purge
module load compiler/devtoolset/7.3.1 mpi/hpcx/2.11.0/gcc-7.3.1 compiler/dtk/23.10

安装miniconda3

wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
bash Miniconda3-latest-Linux-x86_64.sh
source /work/home/yoke_caozi/miniconda3/bin/activate

```
Miniconda3 will now be installed into this location:
/work/home/yoke_caozi/miniconda3

  - Press ENTER to confirm the location
  - Press CTRL-C to abort the installation
  - Or specify a different location below
```

```
sqlite              pkgs/main/linux-64::sqlite-3.45.3-h5eee18b_0
tk                  pkgs/main/linux-64::tk-8.6.14-h39e8969_0
tqdm                pkgs/main/linux-64::tqdm-4.67.1-py312he106c6f_0
truststore          pkgs/main/linux-64::truststore-0.10.0-py312h06a4308_0
typing-extensions   pkgs/main/linux-64::typing-extensions-4.12.2-py312h06a4308_0
typing_extensions   pkgs/main/linux-64::typing_extensions-4.12.2-py312h06a4308_0
tzdata              pkgs/main/noarch::tzdata-2025a-h04d1e81_0
urllib3             pkgs/main/linux-64::urllib3-2.3.0-py312h06a4308_0
wheel               pkgs/main/linux-64::wheel-0.45.1-py312h06a4308_0
xz                  pkgs/main/linux-64::xz-5.4.6-h5eee18b_1
yaml-cpp            pkgs/main/linux-64::yaml-cpp-0.8.0-h6a678d5_1
zlib                pkgs/main/linux-64::zlib-1.2.13-h5eee18b_1
zstandard           pkgs/main/linux-64::zstandard-0.23.0-py312h2c38b39_1
zstd                pkgs/main/linux-64::zstd-1.5.6-hc292b87_0


Downloading and Extracting Packages:

Preparing transaction: done
Executing transaction: - ^[/
```

换源

touch .condarc
vim .condarc

```
[yoke_caozi@login05 ~]$ cat .condarc
channels:
  - defaults
show_channel_urls: true
channel_alias: https://mirrors.tuna.tsinghua.edu.cn/anaconda
default_channels:
  - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/main
  - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/free
  - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/r
  - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/pro
  - https://mirrors.tuna.tsinghua.edu.cn/anaconda/pkgs/msys2
custom_channels:
  conda-forge: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
  msys2: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
  bioconda: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
  menpo: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
  pytorch: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
  simpleitk: https://mirrors.tuna.tsinghua.edu.cn/anaconda/cloud
```

清理缓存，查看配置

conda clean -i
conda config --show

```
(base) [yoke_caozi@login05 ~]$ conda clean -i
Will remove 1 index cache(s).
Proceed ([y]/n)? y

(base) [yoke_caozi@login05 ~]$ conda config --show
add_anaconda_token: True
add_pip_as_python_dependency: True
aggressive_update_packages:
  - ca-certificates
  - certifi
  - openssl
allow_conda_downgrades: False
allow_cycles: True
allow_non_channel_urls: False
allow_softlinks: False
allowlist_channels: []
always_copy: False
always_softlink: False
always_yes: None
```

创建一个新的 **Python** 虚拟环境并安装特定版本的 **PyTorch**
（针对 **AMD GPU** 优化）

conda create -n vit python=3.10
conda activate vit
cd   /public/software/apps/DeepLearning/whl/dtk-
23.10/pytorch/torch1.13/py310
pip install *.whl

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创建一个新的 Python 虚拟环境并安装特定版本的 PyTorch（针对 AMD GPU 优化）

pip   config   set   global.index-url
https://pypi.tuna.tsinghua.edu.cn/simple
pip install "numpy<2" pip install einops

创建一个自动化脚本 (env.sh)，用于快速初始化高性能计算 (HPC) 或深度学习任务的运行环境

vim env.sh

env.sh：

module purge module load compiler/devtoolset/7.3.1

mpi:wq/hpcx/2.11.0/gcc-7.3.1 compiler/dtk/23.10

source /work/home/yoke_caozi/miniconda3/bin/activate

```
(vit) [yoke_caozi@login05 ~]$ cat env.sh
module purge
module load compiler/devtoolset/7.3.1 mpi/hpcx/2.11.0/gcc-7.3.1 compiler/dtk/23.10
source /public/work/yoke_caozi/miniconda3/bin/activate

(vit) [yoke_caozi@login05 ~]$ vim env.sh
(vit) [yoke_caozi@login05 ~]$ source env.sh
bash: /work/yoke_caozi/miniconda3/bin/activate: No such file or directory
(vit) [yoke_caozi@login05 ~]$ pwd
/work/home/yoke_caozi
(vit) [yoke_caozi@login05 ~]$ vim env.sh
(vit) [yoke_caozi@login05 ~]$ source env.sh
(base) [yoke_caozi@login05 ~]$ vim env.sh
(base) [yoke_caozi@login05 ~]$ source env.sh
(base) [yoke_caozi@login05 ~]$ 
```

感 谢 你 的 观 看