

This guideline shows how to install and use Miniconda, PyTorch and TensorFlow on `rwcpu9.cse.ust.hk`

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Using Global Conda Environments

If you don't want to install Miniconda/PyTorch/TensorFlow by yourself, you can use the ones installed in `/data/miniconda3`.

1. Initialize Miniconda:

```
source "/data/miniconda3/etc/profile.d/conda.csh"
```

2. To use PyTorch, activate the `pt` environment:

```
conda activate pt
```

3. To use TensorFlow, activate the `tf` environment:

```
conda activate tf
```

4. After you activate the corresponding environment, you should be able to run Python scripts that uses PyTorch/TensorFlow by the `python` command:

```
python python_script.py
```

Create Your Own Conda Environments

Install Miniconda

1. Download the latest Miniconda installer

```
wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
```

2. Create a folder in `/data/` that is only accessible by you.

```
mkdir /data/`whoami` && chmod 700 /data/`whoami`
```

3. Install Miniconda to your folder in `/data`:

```
sh Miniconda3-latest-Linux-x86_64.sh -b -p /data/`whoami`/miniconda3
```

4. Add the code that initializes Miniconda to your shell initialization script. Suppose you use the default shell `tcsh`:

```
/data/`whoami`/miniconda3/bin/conda init tcsh
```

The code will be written to `~/.tcshrc`. But the default shell initialization script set by cssystem is `~/.cshrc_user`, so you should write the content in `~/.tcshrc` to `~/.cshrc_user`:

```
cat ~/.tcshrc >> ~/.cshrc_user
```

Since if `~/.tcshrc` exists, `~/.cshrc_user` won't be loaded, so you need to remove `~/.tcshrc`:

```
rm ~/.tcshrc
```

5. Log out and log in again. If Miniconda is successfully installed, you should be able to see the usage of `conda` using the following command:

```
conda --help
```

Install PyTorch

1. Create a `conda` environment named `pt` or other name you like:

```
conda create -n pt
```

2. Activate the created `conda` environment:

```
conda activate pt
```

3. Find the command to install the latest PyTorch on this webpage: [Start Locally | PyTorch](#). E.g., as of April 2022, the command is:

```
conda install pytorch torchvision torchaudio cudatoolkit=11.3 -c pytorch
```

4. Verify PyTorch is successfully installed with GPU support:

```
python -c 'import torch; print(torch.cuda.is_available())'
```

The output should be `True`.

Install TensorFlow

1. Create a `conda` environment named `tf` or other name you like:

```
conda create -n tf
```

2. Activate the created `conda` environment:

```
conda activate tf
```

3. Install the latest TensorFlow:

```
conda install tensorflow cudatoolkit -c conda-forge
```

4. Verify TensorFlow is successfully installed with GPU support:

```
python -c 'import tensorflow as tf;  
print(tf.config.list_physical_devices("GPU"))'
```

The output should be similar to:

```
[PhysicalDevice(name='/physical_device:GPU:0', device_type='GPU'),  
PhysicalDevice(name='/physical_device:GPU:1', device_type='GPU')]
```

Useful Links

- [Miniconda Documentation](#)
- [PyTorch: Getting Started](#)
- [Install TensorFlow](#)