Discussions on how to construct linux environment

VM-UNet

1. **Install WSL with Ubuntu:**

```
wsl --install -d Ubuntu
```

- This installs the Windows Subsystem for Linux (WSL) with Ubuntu as the default distribution.
- During the installation, you'll be prompted to set up a username and password for the Linux environment.

2.Verify the Installed WSL Distributions:

```
wsl --list --verbose
```

- Lists all installed WSL distributions with their states and version information.

3.Set Ubuntu as the Default WSL Distribution:

```
wsl --set-default Ubuntu
```

- Makes Ubuntu the default WSL distribution for any `wsl` commands.

4.Launch the Ubuntu Distribution:

```
wsl -d Ubuntu
```

- Opens the Ubuntu terminal. If you're already in Ubuntu, you can skip this step.

5. Update and Upgrade the System:

```
sudo apt update && sudo apt upgrade -y
```

- Updates the package list and upgrades all installed packages to the latest versions. The `-y` flag automatically confirms prompts.

6. Download Miniconda Installer:

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

- Downloads the Miniconda installer for Linux.

7. Install Miniconda:

```
bash Miniconda3-latest-Linux-x86_64.sh
```

- Runs the Miniconda installer. Follow the on-screen prompts to complete the installation.

Initialize Conda:

```
conda init
```

- Configures the shell to use Conda by default.

9. Reload the Shell:

```
exec $SHELL
```

- Restarts the shell to apply the changes made by `conda init`.

10.Create a Conda Environment for VM-UNet:

```
conda create -n vmunet python=3.8
```

- Creates a new Conda environment named `vmunet` with Python 3.8.

11.Activate the Conda Environment:

```
conda activate vmunet
```

- Activates the `vmunet` environment for installing dependencies.

12.Install the CUDA Toolkit:

```
conda install nvidia/label/cuda-11.8.0::cuda-toolkit
```

- Installs the CUDA toolkit version 11.8 required for PyTorch.

13.Install Required Python Libraries:

```
pip install torch==1.13.0 torchvision==0.14.0 torchaudio==0.13.0 --extra-index-url https://download.pytorch.org/whl/cu117

pip install packaging

pip install timm==0.4.12

pip install pytest chardet yacs termcolor

pip install submitit tensorboardX

pip install triton==2.0.0

pip install causal_conv1d==1.0.0  # Adjust version if necessary for compatibility

pip install mamba_ssm==1.0.1

pip install scikit-learn matplotlib thop h5py SimpleITK scikit-image medpy yacs
```

- Installs essential machine learning and utility libraries for the VM-UNet project.