

## 1. mini conda 설치

reference: chatgpt

```
sudo apt update  
sudo apt install wget -y
```

```
dohun@dohun-AERO-5-KE:~$ sudo apt update  
기준:1 http://kr.archive.ubuntu.com/ubuntu jammy InRelease  
기준:2 http://kr.archive.ubuntu.com/ubuntu jammy-updates InRelease  
기준:3 http://kr.archive.ubuntu.com/ubuntu jammy-backports InRelease  
기준:4 https://packages.microsoft.com/repos/code stable InRelease  
기준:5 https://dl.google.com/linux/chrome/deb stable InRelease  
기준:6 http://security.ubuntu.com/ubuntu jammy-security InRelease  
기준:7 http://packages.ros.org/ros2/ubuntu jammy InRelease  
기준:8 https://ppa.launchpadcontent.net/graphics-drivers/ppa/ubuntu jammy InRelease  
파키지 목록을 읽는 중입니다... 완료  
의존성 트리를 만드는 중입니다... 완료  
상태 정보를 읽는 중입니다... 완료  
1 패키지를 업그레이드할 수 있습니다. 확인하려면 'apt list --upgradable'를 실행하  
십시오.  
dohun@dohun-AERO-5-KE:~$ sudo apt install wget -y  
파키지 목록을 읽는 중입니다... 완료  
의존성 트리를 만드는 중입니다... 완료  
상태 정보를 읽는 중입니다... 완료  
패키지 wget는 이미 최신 버전입니다 (1.21.2-2ubuntu1.1).  
다음 패키지가 자동으로 설치되었지만 더 이상 필요하지 않습니다:  
libexpat1:i386 libgbm1:i386 libode-dev libwpe-1.0-1 libwpebackend-fdo-1.0-1  
libx11-xcb1:i386 libxcb-dri3-0:i386 libxcb-present0:i386 libxcb-randr0:i386  
nvidia-firmware-550-550.120 nvidia-firmware-550-550.144.03  
nvidia-firmware-570-570.144 python3-rosdistro python3-rosPKG  
'sudo apt autoremove'를 이용하여 제거하십시오.  
0개 업그레이드, 0개 새로 설치, 0개 제거 및 1개 업그레이드 안 함.  
dohun@dohun-AERO-5-KE:~$
```

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

```
dohun@dohun-AERO-5-KE:~$ wget https://repo.anaconda.com/miniconda/Miniconda3-lat  
est-Linux-x86_64.sh  
--2025-09-09 02:42:02-- https://repo.anaconda.com/miniconda/Miniconda3-latest-L  
inux-x86_64.sh  
repo.anaconda.com (repo.anaconda.com) 해석 중... 104.16.32.241, 104.16.191.158,  
2606:4700::6810:20f1, ...  
다음으로 연결 중: repo.anaconda.com (repo.anaconda.com)|104.16.32.241|:443... 연  
결했습니다.  
HTTP 요청을 보냈습니다. 응답 기다리는 중... 200 OK  
길이: 162129736 (155M) [application/octet-stream]  
저장 위치: 'Miniconda3-latest-Linux-x86_64.sh.1'  
  
Miniconda3-latest-L 100%[=====] 154.62M 11.2MB/s / 14s  
2025-09-09 02:42:16 (11.1 MB/s) - 'Miniconda3-latest-Linux-x86_64.sh.1' 저장함 [162129736/162129736]
```

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

```
dohun@dohun-AERO-5-KE:~$ bash Miniconda3-latest-Linux-x86_64.sh
Welcome to Miniconda3 py313_25.5.1-0

In order to continue the installation process, please review the license
agreement.

Please, press ENTER to continue
>>> □
```

[Enter] 누름. 라이센스 내용이 나옴.

```
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--More-- □
```

3~5번 [Enter] 누름. “Do you accept the license terms?” 나오면 yes입력하고 [Enter].

```
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Y WAY OUT OF THE USE OF MINICONDA(R), EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

Do you accept the license terms? [yes|no]
>>> □
```

miniconda를 설치할 경로를 물어봄. 디폴트 경로를 원하면 [Enter]를 누르고, 다른 경로를 원하면 다른 경로를 입력하면 됨. (여기서는 다른 경로를 입력해서 진행함.)

```
Do you accept the license terms? [yes|no]
>>> yes

Miniconda3 will now be installed into this location:
/home/dohun/miniconda3

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

[/home/dohun/miniconda3] >>> /home/dohun/folder/miniconda3
```

miniconda가 설치되면서 마지막에 .bashrc에 conda를 자동 등록할 것인지 물음. yes를 입력하고 [Enter].

```
Downloading and Extracting Packages:

Preparing transaction: done
Executing transaction: done
entry_point.py:256: DeprecationWarning: Python 3.14 will, by default, filter ext
racted tar archives and reject files or modify their metadata. Use the filter ar
gument to control this behavior.
installation finished.

WARNING:
  You currently have a PYTHONPATH environment variable set. This may cause
  unexpected behavior when running the Python interpreter in Miniconda3.
  For best results, please verify that your PYTHONPATH only points to
  directories of packages that are compatible with the Python interpreter
  in Miniconda3: /home/dohun/folder/miniconda3
Do you wish to update your shell profile to automatically initialize conda?
This will activate conda on startup and change the command prompt when activated
.
If you'd prefer that conda's base environment not be activated on startup,
  run the following command when conda is activated:

conda config --set auto_activate_base false

You can undo this by running `conda init --reverse $SHELL`? [yes|no]
[no] >>> yes
```

miniconda가 설치 완료.

```
You can undo this by running `conda init --reverse $SHELL`? [yes|no]
[no] >>> yes
no change  /home/dohun/folder/miniconda3/condabin/conda
no change  /home/dohun/folder/miniconda3/bin/conda
no change  /home/dohun/folder/miniconda3/bin/conda-env
no change  /home/dohun/folder/miniconda3/bin/activate
no change  /home/dohun/folder/miniconda3/bin/deactivate
no change  /home/dohun/folder/miniconda3/etc/profile.d/conda.sh
no change  /home/dohun/folder/miniconda3/etc/fish/conf.d/conda.fish
no change  /home/dohun/folder/miniconda3/shell/condabin/Conda.psm1
no change  /home/dohun/folder/miniconda3/shell/condabin/conda-hook.ps1
no change  /home/dohun/folder/miniconda3/lib/python3.13/site-packages/xontrib
/conda.xsh
no change  /home/dohun/folder/miniconda3/etc/profile.d/conda.csh
no change  /home/dohun/.bashrc
No action taken.
Thank you for installing Miniconda3!
dohun@dohun-AERO-5-KE:~$
```

새로운 터미널창을 열면 앞에 (base)라고 되는걸 볼 수 있음.

```
(base) dohun@dohun-AERO-5-KE:~$  
(base) dohun@dohun-AERO-5-KE:~$  
(base) dohun@dohun-AERO-5-KE:~$ □
```

## 2. LeRobot 설치

reference: <https://github.com/huggingface/lerobot/blob/main/README.md>  
reference2: <https://huggingface.co/docs/lerobot/installation>

### 1) conda 가상환경 만들기

```
conda create -y -n lerobot python=3.10  
conda activate lerobot
```

(base)가 (lerobot)으로 바뀐다.

```
(base) dohun@dohun-AERO-5-KE:~$ conda create -y -n lerobot python=3.10  
2 channel Terms of Service accepted  
Retrieving notices: done  
Channels:  
|- defaults  
Platform: linux-64  
Collecting package metadata (repodata.json): done  
Solving environment: done  
  
==> WARNING: A newer version of conda exists. <==  
    current version: 25.5.1  
    latest version: 25.7.0  
  
Please update conda by running  
  
    $ conda update -n base -c defaults conda  
  
## Package Plan ##  
  
environment location: /home/dohun/folder/miniconda3/envs/lerobot  
  
added / updated specs:  
- python=3.10  
  
The following packages will be downloaded:  


| package                   | build           |         |
|---------------------------|-----------------|---------|
| ca-certificates-2025.7.15 | h06a4308_0      | 126 KB  |
| ncurses-6.5               | h7934f7d_0      | 1.1 MB  |
| openssl-3.0.17            | h5eee18b_0      | 5.2 MB  |
| pip-25.2                  | pyhc872135_0    | 1.2 MB  |
| python-3.10.18            | h1a3bd86_0      | 26.5 MB |
| readline-8.3              | hc2a1206_0      | 471 KB  |
| setuptools-78.1.1         | py310h06a4308_0 | 1.7 MB  |
| sqlite-3.50.2             | hb25bd0a_1      | 1.1 MB  |
| tk-8.6.15                 | h54e0aa7_0      | 3.4 MB  |
| wheel-0.45.1              | py310h06a4308_0 | 115 KB  |

  
Total: 41.0 MB  
  
The following NEW packages will be INSTALLED:  


|               |                                             |
|---------------|---------------------------------------------|
| _libgcc_mutex | pkgs/main/linux-64::_libgcc_mutex-0.1-main  |
| _openmp_mutex | pkgs/main/linux-64::_openmp_mutex-5.1-1_gnu |
| bzip2         | pkgs/main/linux-64::bzip2-1.0.8-h5eee18b_6  |


```

```
(base) dohun@dohun-AERO-5-KE:~$ conda activate lerobot  
(lerobot) dohun@dohun-AERO-5-KE:~$ 
```

## 2) ffmpeg 설치

ffmpeg: 멀티미디어(영상, 오디오) 처리 라이브러리/툴킷

주의: **ffmpeg=7.1.1**으로 설치해야 lerobot에서 영상처리가 됨.

```
conda install ffmpeg=7.1.1 -c conda-forge
```

“Proceed ([y]/n)?”가 나오면 [Enter] 누름.

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ conda install ffmpeg=7.1.1 -c conda-forge
2 channel Terms of Service accepted
Channels:
- conda-forge
- defaults
Platform: linux-64
Collecting package metadata (repodata.json): done
Solving environment: done

==> WARNING: A newer version of conda exists. <=
    current version: 25.5.1
    latest version: 25.7.0

Please update conda by running

$ conda update -n base -c defaults conda

## Package Plan ##

environment location: /home/dohun/folder/miniconda3/envs/lerobot

added / updated specs:
- ffmpeg=7.1.1

The following NEW packages will be INSTALLED:

alsa-lib           conda-forge/linux-64::alsa-lib-1.2.14-hb9d3cd8_0
aom                conda-forge/linux-64::aom-3.9.1-hac33072_0
attr               conda-forge/linux-64::attr-2.5.2-h39aace5_0
cairo              conda-forge/linux-64::cairo-1.18.4-h3394656_0
david              conda-forge/linux-64::david-1.2.1-hd590300_0
dbus               conda-forge/linux-64::dbus-1.16.2-h3c4dab8_0
ffmpeg             conda-forge/linux-64::ffmpeg-7.1.1-gpl_hd51cf9b_710
font-ttf-dejavu-s~ conda-forge/noarch::font-ttf-dejavu-sans-mono-2.37-hab24e00_0
font-ttf-inconsol~ conda-forge/noarch::font-ttf-inconsolata-3.000-h77eed37_0
font-ttf-source-c~ conda-forge/noarch::font-ttf-source-code-pro-2.038-h77eed37_0
font-ttf-ubuntu    conda-forge/noarch::font-ttf-ubuntu-0.83-h77eed37_3
fontconfig          conda-forge/linux-64::fontconfig-2.15.0-h7e30c49_1
fonts-conda-ecosy~ conda-forge/noarch::fonts-conda-ecosystem-1-0
fonts-conda-forge  conda-forge/noarch::fonts-conda-forge-1-0
```

The following packages will be UPDATED:

```
libffi              pkgs/main:::libffi-3.4.4-h6a678d5_1 --> conda-forge::libffi-3.4.6-h2dba641_1
libgcc-ng           pkgs/main:::libgcc-ng-11.2.0-h1234567_1 --> conda-forge::libgcc-ng-15.1.0-h69a702a_5
libgomp             pkgs/main:::libgomp-11.2.0-h1234567_1 --> conda-forge::libgomp-15.1.0-h767d61c_5
libstdcxx-ng        pkgs/main:::libstdcxx-ng-11.2.0-h12345~ --> conda-forge::libstdcxx-ng-15.1.0-h4852527
libuuid             pkgs/main:::libuuid-1.41.5-h5eee18b_0 --> conda-forge::libuuid-2.41.1-he9a06e4_0
openssl             pkgs/main:::openssl-3.0.17-h5eee18b_0 --> conda-forge::openssl-3.5.2-h26f9b46_0
xz                 pkgs/main:::xz-5.6.4-h5eee18b_1 --> conda-forge::xz-5.8.1-hbcc6ac9_2
```

The following packages will be SUPERSEDED by a higher-priority channel:

```
python              pkgs/main:::python-3.10.18-h1a3bd86_0 --> conda-forge::python-3.10.18-hd6af730_0_cp
python
```

Proceed ([y]/n)?

```
Downloading and Extracting Packages:
```

```
Preparing transaction: done
Verifying transaction: done
Executing transaction: done
(lerobot) dohun@dohun-AERO-5-KE:~$ 
```

### 3) **huggingface/lerobot** 가져오기

```
cd ~/folder  
git clone https://github.com/huggingface/lerobot.git  
cd lerobot
```

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder$ cd ~/folder  
(lerobot) dohun@dohun-AERO-5-KE:~/folder$ git clone https://github.com/huggingface/lerobot.git  
'lerobot'에 복제합니다...  
remote: Enumerating objects: 35842, done.  
remote: Counting objects: 100% (414/414), done.  
remote: Compressing objects: 100% (191/191), done.  
remote: Total 35842 (delta 259), reused 308 (delta 204), pack-reused 35428 (from 2)  
  오브젝트를 받는 중: 100% (35842/35842), 167.84 MiB | 11.00 MiB/s, 완료.  
  델타를 알아내는 중: 100% (23250/23250), 완료.  
(lerobot) dohun@dohun-AERO-5-KE:~/folder$ cd lerobot/  
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$
```

### 4) **lerobot** 관련 라이브러리 설치하기

```
pip install -e .[all]
```

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip install -e .[all]  
Obtaining file:///home/dohun/folder/lerobot  
  Installing build dependencies ... done  
  Checking if build backend supports build_editable ... done  
  Getting requirements to build editable ... -
```

아래 터미널 사진처럼 빨간글씨로 에러가 뜰때가 있음. 다음 Error처리를 참고.

```
Stored in directory: /tmp/pip-ephem-wheel-cache-76fmzywe/wheels/65/14/10/3ab72  
69fb28304fd21998f85a6c9fc1bfae196e106cae2ca2a  
Successfully built lerobot  
Installing collected packages: pytz, ptyprocess, zipp, toml, six, pyquaternion,  
pygments, psutil, pexpect, mypy-extensions, lxml, kiwisolver, configparser, idna, f  
onttools, decorator, cycler, certifi, reachy2-sdk-api, importlib_metadata, reach  
y2_sdk, datasets, lerobot  
ERROR: pip's dependency resolver does not currently take into account all the pa  
ckages that are installed. This behaviour is the source of the following depende  
ncy conflicts.  
nbconvert 7.16.5 requires beautifulsoup4, which is not installed.  
Successfully installed certifi-2025.8.3 cycler-0.12.1 datasets-3.6.0 decorator-5  
.2.1 fonttools-4.59.2 idna-3.10 importlib_metadata-8.7.0 configparser-2.1.0 kiwisol  
ver-1.4.9 lerobot-0.3.4 lxml-6.0.1 mypy-extensions-1.1.0 pexpect-4.9.0 psutil-7.  
0.0 ptyprocess-0.7.0 pygments-2.19.2 pyquaternion-0.9.9 pytz-2025.2 reachy2-sdk-  
api-1.0.20 reachy2_sdk-1.0.14 six-1.17.0 toml-0.10.2 zipp-3.23.0
```

## 5) Error는 Chat GPT 참고하여 관련된 라이브러리 설치

pip check 명령으로 필요한 라이브러리를 알 수 있음.

pip check 명령 입력 후, 아래 사진에서 빨간색 밑줄처럼 “requires~~~”라고 되어 있는 부분이 필요한 라이브러리.

여기서는 typeguard, webencodings, beautifulsoup4 라이브러리가 필요함.

(아래 사진에서 2번째 4번째 줄 둘다 webencodings 라이브러리가 필요하므로 총 3개의 라이브러리를 설치하면 됨)

```
pip check
```

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip check
generate-parameter-library-py 0.5.0 requires typeguard, which is not installed.
bleach 6.2.0 requires webencodings, which is not installed.
nbconvert 7.16.5 requires beautifulsoup4, which is not installed.
tinycss2 1.4.0 requires webencodings, which is not installed.
```

```
pip install typeguard webencodings beautifulsoup4
```

typeguard, webencodings, beautifulsoup4 라이브러리를 설치함.

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip install typeguard webencodings beautifulsoup4
Collecting typeguard
  Using cached typeguard-4.4.4-py3-none-any.whl.metadata (3.3 kB)
Collecting webencodings
  Using cached webencodings-0.5.1-py2.py3-none-any.whl.metadata (2.1 kB)
Collecting beautifulsoup4
  Using cached beautifulsoup4-4.13.5-py3-none-any.whl.metadata (3.8 kB)
Requirement already satisfied: typing_extensions>=4.14.0 in /home/dohun/folder/miniconda3/envs/lerobot/lib/python3.10/site-packages (from typeguard) (4.15.0)
Collecting soupsieve>1.2 (from beautifulsoup4)
  Using cached soupsieve-2.8-py3-none-any.whl.metadata (4.6 kB)
Using cached typeguard-4.4.4-py3-none-any.whl (34 kB)
Using cached webencodings-0.5.1-py2.py3-none-any.whl (11 kB)
Using cached beautifulsoup4-4.13.5-py3-none-any.whl (105 kB)
Using cached soupsieve-2.8-py3-none-any.whl (36 kB)
Installing collected packages: webencodings, typeguard, soupsieve, beautifulsoup4
Successfully installed beautifulsoup4-4.13.5 soupsieve-2.8 typeguard-4.4.4 webencodings-0.5.1
```

```
pip check
```

다시 한번 pip check 명령으로 필요한 라이브러리가 있는지 확인함.

(아래 사진처럼 “No ~~~~”가 나오면 라이브러리 설치는 완료)

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip check
No broken requirements found.
```

## 6) lerobot 설치하기

```
pip install 'lerobot[all]'
```

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip install 'lerobot[all]'  
Requirement already satisfied: lerobot[all] in /home/dohun/folder/miniconda3/envs/lerobot/lib/python3.10/site-packages (0.3.4)  
Requirement already satisfied: datasets<=3.6.0,>=2.19.0 in /home/dohun/.local/lib/python3.10/site-packages (from lerobot[all]) (2.19.0)  
Requirement already satisfied: diffusers>=0.27.2 in /home/dohun/.local/lib/python3.10/site-packages (from lerobot[all]) (0.34.0)  
Requirement already satisfied: huggingface-hub>=0.34.2 in /home/dohun/.local/lib/python3.10/site-packages (from huggingface-hub[cli,hf-transfer]>=0.34.2->lerobot[all]) (0.34.4)  
Requirement already satisfied: cmake>=3.29.0.1 in /home/dohun/.local/lib/python3.10/site-packages (from lerobot[all]) (4.0.3)  
Requirement already satisfied: einops>=0.8.0 in /home/dohun/.local/lib/python3.10/site-packages (from lerobot[all]) (0.8.1)  
Requirement already satisfied: opencv-python-headless>=4.9.0 in /home/dohun/.local/lib/python3.10/site-packages (from opencv-python-headless>=4.9.0->lerobot[all]) (4.12.0.88)  
Requirement already satisfied: av>=14.2.0 in /home/dohun/.local/lib/python3.10/site-packages (from av>=14.2.0->lerobot[all]) (15.0.0)  
Requirement already satisfied: jsonlines>=4.0.0 in /home/dohun/.local/lib/python3.10/site-packages (from jsonlines>=4.0.0->lerobot[all]) (4.0.0)  
Requirement already satisfied: packaging>=24.2 in /home/dohun/.local/lib/python3.10/site-packages (from packaging>=24.2->lerobot[all]) (24.2)  
Requirement already satisfied: pynput>=1.7.7 in /home/dohun/.local/lib/python3.10/site-packages (from pynput>=1.7.7->lerobot[all]) (1.8.1)  
  
(dohun) dohun@dohun-AERO-5-KE:~/meshcat> pip install 'meshcat>=0.9.6->lerobot[all]' (0.19.2)  
Requirement already satisfied: matplotlib-inline in /home/dohun/.local/lib/python3.10/site-packages (from meshcat>=0.9.6->lerobot[all]) (0.1.7)  
Requirement already satisfied: pexpect>4.3 in /home/dohun/folder/miniconda3/envs/lerobot/lib/python3.10/site-packages (from pexpect>4.3->meshcat>=0.9.6->lerobot[all]) (4.9.0)  
Requirement already satisfied: stack_data in /home/dohun/.local/lib/python3.10/site-packages (from stack_data>=0.9.6->lerobot[all]) (0.6.3)  
Requirement already satisfied: traitlets>=5.13.0 in /home/dohun/.local/lib/python3.10/site-packages (from traitlets>=5.13.0->meshcat>=0.9.6->lerobot[all]) (5.14.3)  
Requirement already satisfied: parso<0.9.0,>=0.8.4 in /home/dohun/.local/lib/python3.10/site-packages (from parso<0.9.0,>=0.8.4->meshcat>=0.9.6->lerobot[all]) (0.8.4)  
Requirement already satisfied: jedi>=0.16->ipython>=5->meshcat>=0.9.6->lerobot[all] (0.8.4)  
Requirement already satisfied: ptyprocess>=0.5 in /home/dohun/folder/miniconda3/envs/lerobot/lib/python3.10/site-packages (from ptyprocess>=0.5->pexpect>4.3->ipython>=5->meshcat>=0.9.6->lerobot[all]) (0.7.0)  
Requirement already satisfied: executing>=1.2.0 in /home/dohun/.local/lib/python3.10/site-packages (from executing>=1.2.0->meshcat>=0.9.6->lerobot[all]) (2.2.0)  
Requirement already satisfied: asttokens>=2.1.0 in /home/dohun/.local/lib/python3.10/site-packages (from asttokens>=2.1.0->stack_data>=0.9.6->lerobot[all]) (3.0.0)  
Requirement already satisfied: pure-eval in /home/dohun/.local/lib/python3.10/site-packages (from pure-eval>=0.2.3->stack_data>=0.9.6->lerobot[all]) (0.2.3)  
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$
```

## 7) datasets 버전 낮추기

(컴퓨터 사양에 따라 `datasets` 버전을 낮추지 않아도 잘 돌아갈 수도 있음.)  
`kerobot train`이나 `visualize_dataset` 등을 할 때, `ValueError`가 생길 수 있음.

```
python src/lerobot/scripts/train.py \
--output_dir=outputs/train/diffusion_push \
--policy.type=diffusion \
--dataset.repo_id=lerobot/pushit \
--policy.push_to_hub=false \
--seed=100000 \
--env.type=pushit \
--batch_size=64 \
--steps=200000 \
--eval_freq=25000 \
--save_freq=25000
```

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ python src/lerobot/scripts/train.py \
--output_dir=outputs/train/diffusion_pusht \
--policy.type=diffusion \
--dataset.repo_id=lerobot/pusht \
--policy.push_to_hub=false \
--seed=100000 \
--env.type=pusht \
--batch_size=64 \
--steps=200000 \
--eval_freq=25000 \
--save_freq=25000
INFO 2025-09-13 00:10:05 ils/utils.py:48 Cuda backend detected, using cuda.
WARNING 2025-09-13 00:10:05 /policies.py:80 Device 'None' is not available. Switching to 'cuda'.
INFO 2025-09-13 00:10:05 ts/train.py:111 {'batch_size': 64,
'dataset': {'episodes': None,
'image_transforms': {'enable': False,
'max_num_transforms': 3,
'random_order': False,
'tfs': {'brightness': {'kwargs': {'brightness': [0.8,
1.2]}, 'type': 'ColorJitter', 'weight': 1.0},
```

아래는 터미널에서 `ValueError` 부분만 따로 가져옴.

`ValueError: Feature type 'List' not found. Available feature types: ['Value', 'ClassLabel', 'Translation', 'TranslationVariableLanguages', 'LargeList', 'Sequence', 'Array2D', 'Array3D', 'Array4D', 'Array5D', 'Audio', 'Image', 'Video', 'Pdf', 'VideoFrame']`

이럴때는 datasets 버전을 낮추면 해결됨.

### pip show datasets

pip show datasets 명령으로 datasets 버전을 확인.(버전은 보통 3.6.0)

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip show datasets
Name: datasets
Version: 3.6.0
Summary: HuggingFace community-driven open-source library of datasets
Home-page: https://github.com/huggingface/datasets
Author: HuggingFace Inc.
Author-email: thomas@huggingface.co
License: Apache 2.0
Location: /home/dohun/folder/miniconda3/envs/lerobot/lib/python3.10/site-packages
Requires: dill, filelock, fsspec, huggingface-hub, multiprocess, numpy, packaging, pandas, pyarrow
, pyyaml, requests, tqdm, xxhash
Required-by: lerobot
```

### pip uninstall datasets

datasets 지우기.

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip uninstall datasets
Found existing installation: datasets 2.19.0
Uninstalling datasets-2.19.0:
Would remove:
/home/dohun/.local/bin/datasets-cli
/home/dohun/.local/lib/python3.10/site-packages/datasets-2.19.0.dist-info/*
/home/dohun/.local/lib/python3.10/site-packages/datasets/*
Proceed (Y/n)? y
Successfully uninstalled datasets-2.19.0
```

### pip install datasets==2.19.0

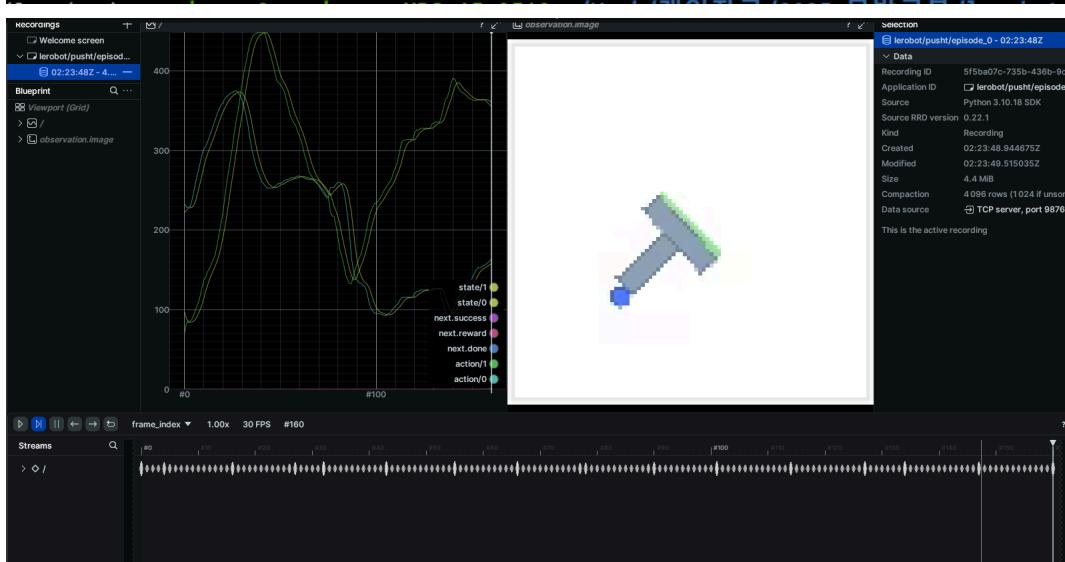
datasets 2.19.0 (lerobot에서 사용 가능한 최소 버전의 datasets) 설치.

```
(lerobot) dohun@dohun-AERO-5-KE:~/folder/lerobot$ pip install datasets==2.19.0
Collecting datasets==2.19.0
  Using cached datasets-2.19.0-py3-none-any.whl.metadata (19 kB)
Requirement already satisfied: filelock in /home/dohun/.local/lib/python3.10/site-packages (from datasets==2.19.0) (3.16.1)
Requirement already satisfied: numpy>=1.17 in /home/dohun/.local/lib/python3.10/site-packages (from datasets==2.19.0) (2.2.6)
Requirement already satisfied: pyarrow>=12.0.0 in /home/dohun/.local/lib/python3.10/site-packages (from datasets==2.19.0) (21.0.0)
Requirement already satisfied: pyarrow-hotfix in /home/dohun/.local/lib/python3.10/site-packages (from datasets==2.19.0) (0.7)
Requirement already satisfied: dill<0.3.9,>=0.3.0 in /home/dohun/.local/lib/python3.10/site-packages (from datasets==2.19.0) (0.3.8)
Requirement already satisfied: pandas in /home/dohun/.local/lib/python3.10/site-packages (from datasets==2.19.0) (2.2.3)
```

8) `visualize_dataset`으로 lerobot 설치가 잘 됐는지 확인.

```
python -m lerobot.scripts.visualize_dataset \
--repo-id lerobot/pusht \
--episode-index 0

(lerobot) senakorea@senakorea-XPS-15-9510:~/Work/개인자료/2025_모방로봇/lerobots$ python -m lerobot.scripts.visualize_dataset \
--repo-id lerobot/pusht \
--episode-index 0
Resolving data files: 100% [██████████] 206/206 [00:00<00:00, 591393.99it/s]
[2025-09-15T02:23:49Z WARN wgpu_hal::gles::egl] Re-initializing Gles context due to Wayland window
[2025-09-15T02:23:49Z WARN wgpu_hal::gles::adapter] Detected skylake derivative running on mesa i915. Clears to srgb textures will use manual shader clears.
[2025-09-15T02:23:49Z WARN wgpu_hal::gles::adapter] Detected skylake derivative running on mesa i915. Clears to srgb textures will use manual shader clears.
100% [██████████] 6/6 [00:00<00:00, 18.84it/s]


```