

Python venv Manual – AI/ML Environment

Guide for using the pre-configured CUDA-enabled Python environment with PyTorch, cuDNN, and essential ML libraries.

1. Location

- Main venv folder: `~/Desktop/user-venv`
- Backup zip: `~/Desktop/user-venv.zip`

2. Activating the venv

- Open MATE Terminal and run: `source ~/Desktop/user-venv/bin/activate`
- Prompt will change to show `(user-venv)` when active.

3. Installing packages

- Inside the venv: `pip install package_name`
- Avoid upgrading `torch`, `cuda`, or `numpy` without approval.

4. Running scripts

- From inside the venv: `python your_script.py`

5. Checking GPU access

- Run: `python -c "import torch; print(torch.cuda.is_available())"` — should return `True`.
- Check GPU usage: `nvidia-smi`

6. Resetting the environment

- Close the terminal.
- Delete `~/Desktop/user-venv`.
- Unzip backup: `unzip ~/Desktop/user-venv.zip -d ~/Desktop`

7. Example workflow

- `source ~/Desktop/user-venv/bin/activate`
- `python train_model.py -dataset data.csv -epochs 10`
- Results are saved in the same directory unless specified.

8. Best practices

- Keep your work in `~/Projects` or another user folder.
- Backup before major changes.
- Use `deactivate` to exit the venv.