

```
=== GPU Information ===
NVIDIA A100-SXM4-40GB, 40960 MiB, 580.95.05
=== Creating new Python 3.11 venv... ===
=== Installing/upgrading dependencies in venv ===
Requirement already satisfied: pip in ./venv/lib/python3.11/site-packages (22.3.1)
Collecting pip
  Using cached pip-25.2-py3-none-any.whl (1.8 MB)
Installing collected packages: pip
  Attempting uninstall: pip
    Found existing installation: pip 22.3.1
    Uninstalling pip-22.3.1:
      Successfully uninstalled pip-22.3.1
Successfully installed pip-25.2
Looking in indexes: https://download.pytorch.org/whl/cu121
Collecting torch==2.5.1
  Downloading https://download.pytorch.org/whl/cu121/torch-2.5.1%2Bcu121-cp311-cp311-linux_x86_64.whl (780.5 MB)
    _____ 780.5/780.5 MB 138.6 MB/s 0:00:02
Collecting torchvision==0.20.1
  Downloading https://download.pytorch.org/whl/cu121/torchvision-0.20.1%2Bcu121-cp311-cp311-linux_x86_64.whl (7.3 MB)
    _____ 7.3/7.3 MB 108.9 MB/s 0:00:00
Collecting filelock (from torch==2.5.1)
  Using cached https://download.pytorch.org/whl/filelock-3.19.1-py3-none-any.whl.metadata (2.1 kB)
Collecting typing-extensions>=4.8.0 (from torch==2.5.1)
  Using cached https://download.pytorch.org/whl/typing_extensions-4.15.0-py3-none-any.whl.metadata (3.3 kB)
Collecting networkx (from torch==2.5.1)
  Using cached https://download.pytorch.org/whl/networkx-3.5-py3-none-any.whl.metadata (6.3 kB)
Collecting jinja2 (from torch==2.5.1)
  Using cached https://download.pytorch.org/whl/jinja2-3.1.6-py3-none-any.whl.metadata (2.9 kB)
Collecting fsspec (from torch==2.5.1)
  Using cached https://download.pytorch.org/whl/fsspec-2025.9.0-py3-none-any.whl.metadata (10 kB)
Collecting nvidia-cuda-nvrtc-cu12==12.1.105 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cuda_nvrtc_cu12-12.1.105-py3-none-manylinux1_x86_64.whl (23.7 MB)
    _____ 23.7/23.7 MB 38.6 MB/s 0:00:00
Collecting nvidia-cuda-runtime-cu12==12.1.105 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cuda_runtime_cu12-12.1.105-py3-none-manylinux1_x86_64.whl (823 kB)
    _____ 823.6/823.6 kB 56.6 MB/s 0:00:00
Collecting nvidia-cuda-cupti-cu12==12.1.105 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cuda_cupti_cu12-12.1.105-py3-none-manylinux1_x86_64.whl (14.1 MB)
    _____ 14.1/14.1 MB 264.2 MB/s 0:00:00
Collecting nvidia-cudnn-cu12==9.1.0.70 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cudnn_cu12-9.1.0.70-py3-none-manylinux2014_x86_64.whl (664.8 MB)
    _____ 664.8/664.8 MB 153.1 MB/s 0:00:02
Collecting nvidia-cublas-cu12==12.1.3.1 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cublas_cu12-12.1.3.1-py3-none-manylinux1_x86_64.whl (410.6 MB)
    _____ 410.6/410.6 MB 95.4 MB/s 0:00:02
Collecting nvidia-cufft-cu12==11.0.2.54 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cufft_cu12-11.0.2.54-py3-none-manylinux1_x86_64.whl (121.6 MB)
    _____ 121.6/121.6 MB 85.0 MB/s 0:00:01
Collecting nvidia-curand-cu12==10.3.2.106 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_curand_cu12-10.3.2.106-py3-none-manylinux1_x86_64.whl (56.5 MB)
    _____ 56.5/56.5 MB 74.8 MB/s 0:00:00
Collecting nvidia-cusolver-cu12==11.4.5.107 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cusolver_cu12-11.4.5.107-py3-none-manylinux1_x86_64.whl (124.2 MB)
    _____ 124.2/124.2 MB 168.2 MB/s 0:00:00
Collecting nvidia-cuspars-cu12==12.1.0.106 (from torch==2.5.1)
  Downloading https://download.pytorch.org/whl/cu121/nvidia_cuspars-cu12-12.1.0.106-py3-none-manylinux1_x86_64.whl (196.0 MB)
    _____ 196.0/196.0 MB 264.7 MB/s 0:00:00
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Collecting nvidia-nccl-cu12==2.21.5 (from torch==2.5.1)

Downloading [https://download.pytorch.org/whl/nvidia\\_nccl\\_cu12-2.21.5-py3-none-manylinux2014\\_x86\\_64.whl](https://download.pytorch.org/whl/nvidia_nccl_cu12-2.21.5-py3-none-manylinux2014_x86_64.whl) (188.7 MB)

188.7/188.7 MB 99.3 MB/s 0:00:01

Collecting nvidia-nvtx-cu12==12.1.105 (from torch==2.5.1)

Downloading [https://download.pytorch.org/whl/cu121/nvidia\\_nvtx\\_cu12-12.1.105-py3-none-manylinux1\\_x86\\_64.whl](https://download.pytorch.org/whl/cu121/nvidia_nvtx_cu12-12.1.105-py3-none-manylinux1_x86_64.whl) (99 kB)

Collecting triton==3.1.0 (from torch==2.5.1)

Downloading [https://download.pytorch.org/whl/triton-3.1.0-cp311-cp311-manylinux\\_2\\_17\\_x86\\_64.manylinux2014\\_x86\\_64.whl](https://download.pytorch.org/whl/triton-3.1.0-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl) (209.5 MB)

209.5/209.5 MB 41.5 MB/s 0:00:05

Collecting sympy==1.13.1 (from torch==2.5.1)

Downloading <https://download.pytorch.org/whl/sympy-1.13.1-py3-none-any.whl> (6.2 MB)

6.2/6.2 MB 216.8 MB/s 0:00:00

Collecting numpy (from torchvision==0.20.1)

Using cached [https://download.pytorch.org/whl/numpy-2.3.3-cp311-cp311-manylinux\\_2\\_27\\_x86\\_64.manylinux\\_2\\_28\\_x86\\_64.whl](https://download.pytorch.org/whl/numpy-2.3.3-cp311-cp311-manylinux_2_27_x86_64.manylinux_2_28_x86_64.whl).metadata (62 kB)

Collecting pillow!=8.3.\*,>=5.3.0 (from torchvision==0.20.1)

Using cached [https://download.pytorch.org/whl/pillow-11.3.0-cp311-cp311-manylinux\\_2\\_27\\_x86\\_64.manylinux\\_2\\_28\\_x86\\_64.whl](https://download.pytorch.org/whl/pillow-11.3.0-cp311-cp311-manylinux_2_27_x86_64.manylinux_2_28_x86_64.whl).metadata (9.0 kB)

Collecting nvidia-nvjitlink-cu12 (from nvidia-cusolver-cu12==11.4.5.107->torch==2.5.1)

Downloading [https://download.pytorch.org/whl/nvidia\\_nvjitlink\\_cu12-12.9.86-py3-none-manylinux2010\\_x86\\_64.manylinux\\_2\\_12\\_x86\\_64.whl](https://download.pytorch.org/whl/nvidia_nvjitlink_cu12-12.9.86-py3-none-manylinux2010_x86_64.manylinux_2_12_x86_64.whl).metadata (1.7 kB)

Collecting mpmath<1.4,>=1.1.0 (from sympy==1.13.1->torch==2.5.1)

Using cached <https://download.pytorch.org/whl/mpmath-1.3.0-py3-none-any.whl> (536 kB)

Collecting MarkupSafe>=2.0 (from jinja2->torch==2.5.1)

Using cached [https://download.pytorch.org/whl/MarkupSafe-2.1.5-cp311-cp311-manylinux\\_2\\_17\\_x86\\_64.manylinux2014\\_x86\\_64.whl](https://download.pytorch.org/whl/MarkupSafe-2.1.5-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl) (28 kB)

Using cached [https://download.pytorch.org/whl/pillow-11.3.0-cp311-cp311-manylinux\\_2\\_27\\_x86\\_64.manylinux\\_2\\_28\\_x86\\_64.whl](https://download.pytorch.org/whl/pillow-11.3.0-cp311-cp311-manylinux_2_27_x86_64.manylinux_2_28_x86_64.whl) (6.6 MB)

Using cached [https://download.pytorch.org/whl/typing\\_extensions-4.15.0-py3-none-any.whl](https://download.pytorch.org/whl/typing_extensions-4.15.0-py3-none-any.whl) (44 kB)

Using cached <https://download.pytorch.org/whl/filelock-3.19.1-py3-none-any.whl> (15 kB)

Using cached <https://download.pytorch.org/whl/fsspec-2025.9.0-py3-none-any.whl> (199 kB)

Using cached <https://download.pytorch.org/whl/jinja2-3.1.6-py3-none-any.whl> (134 kB)

Using cached <https://download.pytorch.org/whl/networkx-3.5-py3-none-any.whl> (2.0 MB)

Using cached [https://download.pytorch.org/whl/numpy-2.3.3-cp311-cp311-manylinux\\_2\\_27\\_x86\\_64.manylinux\\_2\\_28\\_x86\\_64.whl](https://download.pytorch.org/whl/numpy-2.3.3-cp311-cp311-manylinux_2_27_x86_64.manylinux_2_28_x86_64.whl) (16.9 MB)

Downloading [https://download.pytorch.org/whl/nvidia\\_nvjitlink\\_cu12-12.9.86-py3-none-manylinux2010\\_x86\\_64.manylinux\\_2\\_12\\_x86\\_64.whl](https://download.pytorch.org/whl/nvidia_nvjitlink_cu12-12.9.86-py3-none-manylinux2010_x86_64.manylinux_2_12_x86_64.whl) (39.7 MB)

39.7/39.7 MB 25.5 MB/s 0:00:01

Installing collected packages: mpmath, typing-extensions, sympy, pillow, nvidia-nvtx-cu12, nvidia-nvjitlink-cu12, nvidia-nccl-cu12, nvidia-curand-cu12, nvidia-cufft-cu12, nvidia-cuda-runtime-cu12, nvidia-cuda-nvrtc-cu12, nvidia-cuda-cupti-cu12, nvidia-cublas-cu12, numpy, networkx, MarkupSafe, fsspec, filelock, triton, nvidia-cuspars-cu12, nvidia-cudnn-cu12, jinja2, nvidia-cusolver-cu12, torch, torchvision

Successfully installed MarkupSafe-2.1.5 filelock-3.19.1 fsspec-2025.9.0 jinja2-3.1.6 mpmath-1.3.0 networkx-3.5 numpy-2.3.3 nvidia-cublas-cu12-12.1.3.1 nvidia-cuda-cupti-cu12-12.1.105 nvidia-cuda-nvrtc-cu12-12.1.105 nvidia-cuda-runtime-cu12-12.1.105 nvidia-cudnn-cu12-9.1.0.70 nvidia-cufft-cu12-11.0.2.54 nvidia-curand-cu12-10.3.2.106 nvidia-cusolver-cu12-11.4.5.107 nvidia-cuspars-cu12-12.1.0.106 nvidia-nccl-cu12-2.21.5 nvidia-nvjitlink-cu12-12.9.86 nvidia-nvtx-cu12-12.1.105 pillow-11.3.0 sympy-1.13.1 torch-2.5.1+cu121 torchvision-0.20.1+cu121 triton-3.1.0 typing-extensions-4.15.0

Collecting transformers

Using cached transformers-4.57.1-py3-none-any.whl.metadata (43 kB)

Collecting accelerate

Downloading accelerate-1.11.0-py3-none-any.whl.metadata (19 kB)

Requirement already satisfied: pillow in ./venv/lib/python3.11/site-packages (11.3.0)

Collecting tqdm

Using cached tqdm-4.67.1-py3-none-any.whl.metadata (57 kB)

Collecting scikit-learn

Using cached scikit\_learn-1.7.2-cp311-cp311-

manylinux2014\_x86\_64.manylinux\_2\_17\_x86\_64.whl.metadata (11 kB)

Collecting numpy<2

Using cached numpy-1.26.4-cp311-cp311-manylinux\_2\_17\_x86\_64.manylinux2014\_x86\_64.whl.metadata (61 kB)

Collecting qwen-vl-utils

Downloading qwen\_vl\_utils-0.0.14-py3-none-any.whl.metadata (9.0 kB)

Requirement already satisfied: filelock in ./venv/lib/python3.11/site-packages (from transformers)

(3.19.1)

Collecting huggingface-hub<1.0,>=0.34.0 (from transformers)

Using cached huggingface\_hub-0.36.0-py3-none-any.whl.metadata (14 kB)

Collecting packaging>=20.0 (from transformers)

Using cached packaging-25.0-py3-none-any.whl.metadata (3.3 kB)

Collecting pyyaml>=5.1 (from transformers)

Using cached pyyaml-6.0.3-cp311-cp311-

manylinux2014\_x86\_64.manylinux\_2\_17\_x86\_64.manylinux\_2\_28\_x86\_64.whl.metadata (2.4 kB)

Collecting regex!=2019.12.17 (from transformers)

Using cached regex-2025.10.23-cp311-cp311-

manylinux2014\_x86\_64.manylinux\_2\_17\_x86\_64.manylinux\_2\_28\_x86\_64.whl.metadata (40 kB)

Collecting requests (from transformers)

Using cached requests-2.32.5-py3-none-any.whl.metadata (4.9 kB)

Collecting tokenizers<=0.23.0,>=0.22.0 (from transformers)

Using cached tokenizers-0.22.1-cp39-abi3-manylinux\_2\_17\_x86\_64.manylinux2014\_x86\_64.whl.metadata (6.8 kB)

Collecting safetensors>=0.4.3 (from transformers)

Using cached safetensors-0.6.2-cp38-abi3-manylinux\_2\_17\_x86\_64.manylinux2014\_x86\_64.whl.metadata (4.1 kB)

Requirement already satisfied: fsspec>=2023.5.0 in ./venv/lib/python3.11/site-packages (from huggingface-hub<1.0,>=0.34.0->transformers) (2025.9.0)

Requirement already satisfied: typing-extensions>=3.7.4.3 in ./venv/lib/python3.11/site-packages (from huggingface-hub<1.0,>=0.34.0->transformers) (4.15.0)

Collecting hf-xet<2.0.0,>=1.1.3 (from huggingface-hub<1.0,>=0.34.0->transformers)

Using cached hf\_xet-1.1.10-cp37-abi3-manylinux\_2\_17\_x86\_64.manylinux2014\_x86\_64.whl.metadata (4.7 kB)

Collecting psutil (from accelerate)

Downloading psutil-7.1.1-cp36-abi3-

manylinux\_2\_12\_x86\_64.manylinux2010\_x86\_64.manylinux\_2\_17\_x86\_64.manylinux2014\_x86\_64.whl.metadata (23 kB)

Requirement already satisfied: torch>=2.0.0 in ./venv/lib/python3.11/site-packages (from accelerate) (2.5.1+cu121)

Collecting scipy>=1.8.0 (from scikit-learn)

Using cached scipy-1.16.2-cp311-cp311-manylinux2014\_x86\_64.manylinux\_2\_17\_x86\_64.whl.metadata (62 kB)

Collecting joblib>=1.2.0 (from scikit-learn)

Using cached joblib-1.5.2-py3-none-any.whl.metadata (5.6 kB)

Collecting threadpoolctl>=3.1.0 (from scikit-learn)

Using cached threadpoolctl-3.6.0-py3-none-any.whl.metadata (13 kB)

Collecting av (from qwen-vl-utils)

Downloading av-16.0.1-cp311-cp311-manylinux\_2\_28\_x86\_64.whl.metadata (4.6 kB)

Requirement already satisfied: networkx in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (3.5)

Requirement already satisfied: Jinja2 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (3.1.6)

Requirement already satisfied: nvidia-cuda-nvrtc-cu12==12.1.105 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (12.1.105)

Requirement already satisfied: nvidia-cuda-runtime-cu12==12.1.105 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (12.1.105)

Requirement already satisfied: nvidia-cuda-cupti-cu12==12.1.105 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (12.1.105)

Requirement already satisfied: nvidia-cudnn-cu12==9.1.0.70 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (9.1.0.70)

Requirement already satisfied: nvidia-cublas-cu12==12.1.3.1 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (12.1.3.1)

Requirement already satisfied: nvidia-cufft-cu12==11.0.2.54 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (11.0.2.54)

Requirement already satisfied: nvidia-curand-cu12==10.3.2.106 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (10.3.2.106)

Requirement already satisfied: nvidia-cusolver-cu12==11.4.5.107 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (11.4.5.107)

Requirement already satisfied: nvidia-cusparse-cu12==12.1.0.106 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (12.1.0.106)

Requirement already satisfied: nvidia-nccl-cu12==2.21.5 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (2.21.5)

Requirement already satisfied: nvidia-nvtx-cu12==12.1.105 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (12.1.105)

Requirement already satisfied: triton==3.1.0 in ./venv/lib/python3.11/site-packages (from torch>=2.0.0->accelerate) (3.1.0)

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Requirement already satisfied: sympy==1.13.1 in ./venv/lib/python3.11/site-packages (from
torch>=2.0.0->accelerate) (1.13.1)
Requirement already satisfied: nvidia-nvjitlink-cu12 in ./venv/lib/python3.11/site-packages (from
nvidia-cusolver-cu12==11.4.5.107->torch>=2.0.0->accelerate) (12.9.86)
Requirement already satisfied: mpmath<1.4,>=1.1.0 in ./venv/lib/python3.11/site-packages (from
sympy==1.13.1->torch>=2.0.0->accelerate) (1.3.0)
Requirement already satisfied: MarkupSafe>=2.0 in ./venv/lib/python3.11/site-packages (from
jinja2->torch>=2.0.0->accelerate) (2.1.5)
Collecting charset_normalizer<4,>=2 (from requests->transformers)
  Using cached charset_normalizer-3.4.4-cp311-cp311-
manylinux2014_x86_64.manylinux_2_17_x86_64.manylinux_2_28_x86_64.whl.metadata (37 kB)
Collecting idna<4,>=2.5 (from requests->transformers)
  Using cached idna-3.11-py3-none-any.whl.metadata (8.4 kB)
Collecting urllib3<3,>=1.21.1 (from requests->transformers)
  Using cached urllib3-2.5.0-py3-none-any.whl.metadata (6.5 kB)
Collecting certifi>=2017.4.17 (from requests->transformers)
  Using cached certifi-2025.10.5-py3-none-any.whl.metadata (2.5 kB)
Using cached numpy-1.26.4-cp311-cp311-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (18.3 MB)
Using cached transformers-4.57.1-py3-none-any.whl (12.0 MB)
Using cached huggingface_hub-0.36.0-py3-none-any.whl (566 kB)
Using cached hf_xet-1.1.10-cp37-abi3-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.2 MB)
Using cached tokenizers-0.22.1-cp39-abi3-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.3 MB)
Downloading accelerate-1.11.0-py3-none-any.whl (375 kB)
Using cached tqdm-4.67.1-py3-none-any.whl (78 kB)
Using cached scikit_learn-1.7.2-cp311-cp311-manylinux2014_x86_64.manylinux_2_17_x86_64.whl (9.7
MB)
Downloading qwen_vl_utils-0.0.14-py3-none-any.whl (8.1 kB)
Using cached joblib-1.5.2-py3-none-any.whl (308 kB)
Using cached packaging-25.0-py3-none-any.whl (66 kB)
Using cached pyyaml-6.0.3-cp311-cp311-
manylinux2014_x86_64.manylinux_2_17_x86_64.manylinux_2_28_x86_64.whl (806 kB)
Using cached regex-2025.10.23-cp311-cp311-
manylinux2014_x86_64.manylinux_2_17_x86_64.manylinux_2_28_x86_64.whl (800 kB)
Using cached safetensors-0.6.2-cp38-abi3-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (485 kB)
Using cached scipy-1.16.2-cp311-cp311-manylinux2014_x86_64.manylinux_2_17_x86_64.whl (35.9 MB)
Using cached threadpoolctl-3.6.0-py3-none-any.whl (18 kB)
Downloading av-16.0.1-cp311-cp311-manylinux_2_28_x86_64.whl (40.2 MB)
40.2/40.2 MB 60.3 MB/s 0:00:00
Downloading psutil-7.1.1-cp36-abi3-
manylinux_2_12_x86_64.manylinux2010_x86_64.manylinux_2_17_x86_64.manylinux2014_x86_64.whl (290 kB)
Using cached requests-2.32.5-py3-none-any.whl (64 kB)
Using cached charset_normalizer-3.4.4-cp311-cp311-
manylinux2014_x86_64.manylinux_2_17_x86_64.manylinux_2_28_x86_64.whl (151 kB)
Using cached idna-3.11-py3-none-any.whl (71 kB)
Using cached urllib3-2.5.0-py3-none-any.whl (129 kB)
Using cached certifi-2025.10.5-py3-none-any.whl (163 kB)
Installing collected packages: urllib3, tqdm, threadpoolctl, safetensors, regex, pyyaml, psutil,
packaging, numpy, joblib, idna, hf_xet, charset_normalizer, certifi, av, scipy, requests, scikit-
learn, qwen_vl_utils, huggingface_hub, tokenizers, accelerate, transformers
  Attempting uninstall: numpy
    Found existing installation: numpy 2.3.3
    Uninstalling numpy-2.3.3:
      Successfully uninstalled numpy-2.3.3

Successfully installed accelerate-1.11.0 av-16.0.1 certifi-2025.10.5 charset_normalizer-3.4.4 hf-
xet-1.1.10 huggingface_hub-0.36.0 idna-3.11 joblib-1.5.2 numpy-1.26.4 packaging-25.0 psutil-7.1.1
pyyaml-6.0.3 qwen_vl_utils-0.0.14 regex-2025.10.23 requests-2.32.5 safetensors-0.6.2 scikit_learn-
1.7.2 scipy-1.16.2 threadpoolctl-3.6.0 tokenizers-0.22.1 tqdm-4.67.1 transformers-4.57.1 urllib3-
2.5.0
=== Checking if vision_ccs_corrected.py exists ===
-rw-r----- 1 mdemirev mdemirev 20K Oct 24 01:44 vision_ccs_corrected.py
=== Running vision_ccs_corrected.py ===
The image processor of type `Qwen2VLImageProcessor` is now loaded as a fast processor by default,
even if the model checkpoint was saved with a slow processor. This is a breaking change and may
produce slightly different outputs. To continue using the slow processor, instantiate this class
with `use_fast=False`. Note that this behavior will be extended to all models in a future release.
`torch_dtype` is deprecated! Use `dtype` instead!
Model: Qwen/Qwen2-VL-7B-Instruct

```

```
#####  
# CATEGORY: OBJECT_DETECTION  
#####
```

```
=====
```

EXTRACTING HIDDEN STATES: OBJECT\_DETECTION

```
=====
```

⚠ Cache disabled (use\_cache=False). Extracting new...

Processing 1323 samples in batches of 40

Searching in 2 image directories

LOADING MODEL: qwen2

Device: cuda

Fetching 5 files: 0%		0/5 [00:00<?, ?it/s]
Fetching 5 files: 20%		1/5 [00:14<00:58, 14.73s/it]
Fetching 5 files: 40%		2/5 [00:15<00:19, 6.41s/it]
Fetching 5 files: 100%		5/5 [00:15<00:00, 3.06s/it]

Loading checkpoint shards: 0%		0/5 [00:00<?, ?it/s]
Loading checkpoint shards: 20%		1/5 [00:04<00:17, 4.35s/it]
Loading checkpoint shards: 40%		2/5 [00:08<00:12, 4.26s/it]
Loading checkpoint shards: 60%		3/5 [00:12<00:08, 4.27s/it]
Loading checkpoint shards: 80%		4/5 [00:17<00:04, 4.28s/it]
Loading checkpoint shards: 100%		5/5 [00:18<00:00, 3.16s/it]
Loading checkpoint shards: 100%		5/5 [00:18<00:00, 3.66s/it]

✓ Model loaded successfully

Batches: 0%		0/34 [00:00<?, ?it/s]
Batches: 3%		1/34 [00:08<04:27, 8.11s/it]
Batches: 6%		2/34 [00:14<03:51, 7.23s/it]
Batches: 9%		3/34 [00:19<03:16, 6.33s/it]
Batches: 12%		4/34 [00:25<02:58, 5.95s/it]
Batches: 15%		5/34 [00:30<02:48, 5.80s/it]
Batches: 18%		6/34 [00:37<02:45, 5.92s/it]
Batches: 21%		7/34 [00:42<02:38, 5.88s/it]
Batches: 24%		8/34 [00:48<02:27, 5.69s/it]
Batches: 26%		9/34 [00:53<02:21, 5.67s/it]
Batches: 29%		10/34 [00:59<02:17, 5.75s/it]
Batches: 32%		11/34 [01:05<02:12, 5.78s/it]
Batches: 35%		12/34 [01:11<02:07, 5.78s/it]
Batches: 38%		13/34 [01:16<01:54, 5.47s/it]
Batches: 41%		14/34 [01:21<01:52, 5.61s/it]
Batches: 44%		15/34 [01:27<01:44, 5.48s/it]
Batches: 47%		16/34 [01:33<01:41, 5.67s/it]
Batches: 50%		17/34 [01:38<01:34, 5.57s/it]
Batches: 53%		18/34 [01:44<01:31, 5.71s/it]
Batches: 56%		19/34 [01:51<01:29, 5.95s/it]
Batches: 59%		20/34 [01:56<01:21, 5.83s/it]
Batches: 62%		21/34 [02:02<01:15, 5.81s/it]
Batches: 65%		22/34 [02:07<01:08, 5.69s/it]
Batches: 68%		23/34 [02:13<01:03, 5.75s/it]
Batches: 71%		24/34 [02:20<00:59, 5.98s/it]
Batches: 74%		25/34 [02:26<00:53, 5.94s/it]
Batches: 76%		26/34 [02:31<00:46, 5.86s/it]
Batches: 79%		27/34 [02:38<00:41, 6.00s/it]
Batches: 82%		28/34 [02:43<00:34, 5.72s/it]
Batches: 85%		29/34 [02:49<00:28, 5.77s/it]
Batches: 88%		30/34 [02:54<00:22, 5.67s/it]
Batches: 91%		31/34 [03:00<00:17, 5.72s/it]

Batches: 94% ██████████ | 32/34 [03:05<00:10, 5.49s/it]  
Batches: 97% ██████████ | 33/34 [03:10<00:05, 5.49s/it]  
Batches: 100% ██████████ | 34/34 [03:11<00:00, 4.06s/it]  
Batches: 100% ██████████ | 34/34 [03:11<00:00, 5.63s/it]

=====

✓ Successfully processed: 1140/1323  
X Skipped (missing/error): 183/1323

First 10 skipped: 000000262227.jpg, 000000262440.jpg, 000000262440.jpg, 000000262682.jpg,  
000000262682.jpg, 000000262682.jpg, 000000139684.jpg, 000000000632.jpg, 000000000632.jpg,  
000000000632.jpg...

Extracted shapes:  
Positive: (1140, 3584)  
Negative: (1140, 3584)  
Labels: (1140,)

Cached to: hidden\_states\_cache\_corrected/cache\_object\_detection\_1323\_qwen2.npz

=====

TRAINING CCS PROBE

=====

Dataset split:  
Train: 797 samples (403 pos, 394 neg)  
Test: 343 samples (173 pos, 170 neg)  
Hidden dim: 3584

=====

TRAINING WITH MULTIPLE RANDOM RESTARTS

=====

Trial 1/10: Loss = 0.000730  
Trial 2/10: Loss = 0.000822  
Trial 3/10: Loss = 0.000669  
Trial 4/10: Loss = 0.000563  
Trial 5/10: Loss = 0.000501  
Trial 6/10: Loss = 0.000767  
Trial 7/10: Loss = 0.000594  
Trial 8/10: Loss = 0.000721  
Trial 9/10: Loss = 0.000859  
Trial 10/10: Loss = 0.000744

=====

EVALUATION WITH BEST PROBE

=====

Best loss: 0.000501

Test Results:  
Overall Accuracy: 84.5% (290/343)  
Positive samples: 87.3% (173 samples)  
Negative samples: 81.8% (170 samples)

✓ COMPLETE: object\_detection → 84.5%

#####  
# CATEGORY: ATTRIBUTE\_RECOGNITION  
#####

=====

EXTRACTING HIDDEN STATES: ATTRIBUTE\_RECOGNITION

=====

⚠ Cache disabled (use\_cache=False). Extracting new...

Processing 3410 samples in batches of 40  
Searching in 2 image directories  
LOADING MODEL: qwen2  
Device: cuda

```

Loading checkpoint shards: 0% | 0/5 [00:00<?, ?it/s]
Loading checkpoint shards: 20% | 1/5 [00:01<00:07, 1.78s/it]
Loading checkpoint shards: 40% | 2/5 [00:03<00:05, 1.69s/it]
Loading checkpoint shards: 60% | 3/5 [00:05<00:03, 1.69s/it]
Loading checkpoint shards: 80% | 4/5 [00:06<00:01, 1.69s/it]
Loading checkpoint shards: 100% | 5/5 [00:07<00:00, 1.25s/it]
Loading checkpoint shards: 100% | 5/5 [00:07<00:00, 1.45s/it]
✓ Model loaded successfully

```

```

Batches: 0% | 0/86 [00:00<?, ?it/s]
Batches: 1% | 1/86 [00:06<08:50, 6.24s/it]
Batches: 2% | 2/86 [00:13<09:19, 6.66s/it]
Batches: 3% | 3/86 [00:19<09:06, 6.58s/it]
Batches: 5% | 4/86 [00:25<08:25, 6.17s/it]
Batches: 6% | 5/86 [00:31<08:27, 6.26s/it]
Batches: 7% | 6/86 [00:37<07:59, 5.99s/it]
Batches: 8% | 7/86 [00:42<07:50, 5.95s/it]
Batches: 9% | 8/86 [00:47<07:08, 5.49s/it]
Batches: 10% | 9/86 [00:52<06:57, 5.43s/it]
Batches: 12% | 10/86 [00:57<06:37, 5.23s/it]
Batches: 13% | 11/86 [01:03<06:52, 5.50s/it]
Batches: 14% | 12/86 [01:09<06:44, 5.47s/it]
Batches: 15% | 13/86 [01:14<06:39, 5.47s/it]
Batches: 16% | 14/86 [01:20<06:38, 5.54s/it]
Batches: 17% | 15/86 [01:26<06:41, 5.65s/it]
Batches: 19% | 16/86 [01:32<06:54, 5.92s/it]
Batches: 20% | 17/86 [01:38<06:51, 5.97s/it]
Batches: 21% | 18/86 [01:43<06:22, 5.62s/it]
Batches: 22% | 19/86 [01:49<06:14, 5.58s/it]
Batches: 23% | 20/86 [01:55<06:21, 5.78s/it]
Batches: 24% | 21/86 [02:01<06:23, 5.90s/it]
Batches: 26% | 22/86 [02:07<06:23, 5.99s/it]
Batches: 27% | 23/86 [02:13<06:20, 6.05s/it]
Batches: 28% | 24/86 [02:19<06:04, 5.88s/it]
Batches: 29% | 25/86 [02:25<06:08, 6.05s/it]
Batches: 30% | 26/86 [02:32<06:07, 6.12s/it]
Batches: 31% | 27/86 [02:37<05:52, 5.97s/it]
Batches: 33% | 28/86 [02:43<05:36, 5.80s/it]
Batches: 34% | 29/86 [02:49<05:33, 5.86s/it]
Batches: 35% | 30/86 [02:54<05:19, 5.70s/it]
Batches: 36% | 31/86 [03:00<05:16, 5.76s/it]
Batches: 37% | 32/86 [03:07<05:30, 6.11s/it]
Batches: 38% | 33/86 [03:12<05:13, 5.92s/it]
Batches: 40% | 34/86 [03:18<05:01, 5.79s/it]
Batches: 41% | 35/86 [03:24<05:08, 6.05s/it]
Batches: 42% | 36/86 [03:31<05:09, 6.19s/it]
Batches: 43% | 37/86 [03:37<04:58, 6.10s/it]
Batches: 44% | 38/86 [03:43<04:47, 5.99s/it]
Batches: 45% | 39/86 [03:48<04:32, 5.81s/it]
Batches: 47% | 40/86 [03:54<04:26, 5.80s/it]
Batches: 48% | 41/86 [03:59<04:19, 5.76s/it]
Batches: 49% | 42/86 [04:04<04:02, 5.50s/it]
Batches: 50% | 43/86 [04:10<04:02, 5.64s/it]
Batches: 51% | 44/86 [04:16<03:52, 5.54s/it]
Batches: 52% | 45/86 [04:21<03:52, 5.66s/it]
Batches: 53% | 46/86 [04:28<03:50, 5.77s/it]

```

Batches: 55%	<div></div>	47/86 [04:33<03:46, 5.81s/it]
Batches: 56%	<div></div>	48/86 [04:40<03:47, 5.99s/it]
Batches: 57%	<div></div>	49/86 [04:45<03:35, 5.83s/it]
Batches: 58%	<div></div>	50/86 [04:51<03:27, 5.76s/it]
Batches: 59%	<div></div>	51/86 [04:57<03:25, 5.88s/it]
Batches: 60%	<div></div>	52/86 [05:03<03:16, 5.79s/it]
Batches: 62%	<div></div>	53/86 [05:09<03:15, 5.92s/it]
Batches: 63%	<div></div>	54/86 [05:15<03:12, 6.03s/it]
Batches: 64%	<div></div>	55/86 [05:21<03:05, 5.99s/it]
Batches: 65%	<div></div>	56/86 [05:27<02:58, 5.96s/it]
Batches: 66%	<div></div>	57/86 [05:33<02:56, 6.10s/it]
Batches: 67%	<div></div>	58/86 [05:40<02:53, 6.21s/it]
Batches: 69%	<div></div>	59/86 [05:46<02:50, 6.33s/it]
Batches: 70%	<div></div>	60/86 [05:52<02:39, 6.13s/it]
Batches: 71%	<div></div>	61/86 [05:58<02:34, 6.19s/it]
Batches: 72%	<div></div>	62/86 [06:04<02:27, 6.15s/it]
Batches: 73%	<div></div>	63/86 [06:10<02:16, 5.94s/it]
Batches: 74%	<div></div>	64/86 [06:16<02:12, 6.04s/it]
Batches: 76%	<div></div>	65/86 [06:22<02:05, 5.99s/it]
Batches: 77%	<div></div>	66/86 [06:28<01:59, 5.99s/it]
Batches: 78%	<div></div>	67/86 [06:34<01:52, 5.94s/it]
Batches: 79%	<div></div>	68/86 [06:39<01:41, 5.63s/it]
Batches: 80%	<div></div>	69/86 [06:44<01:36, 5.65s/it]
Batches: 81%	<div></div>	70/86 [06:50<01:31, 5.73s/it]
Batches: 83%	<div></div>	71/86 [06:57<01:27, 5.85s/it]
Batches: 84%	<div></div>	72/86 [07:02<01:20, 5.74s/it]
Batches: 85%	<div></div>	73/86 [07:07<01:13, 5.64s/it]
Batches: 86%	<div></div>	74/86 [07:14<01:10, 5.87s/it]
Batches: 87%	<div></div>	75/86 [07:20<01:05, 5.93s/it]
Batches: 88%	<div></div>	76/86 [07:26<00:59, 5.99s/it]
Batches: 90%	<div></div>	77/86 [07:32<00:52, 5.84s/it]
Batches: 91%	<div></div>	78/86 [07:38<00:48, 6.04s/it]
Batches: 92%	<div></div>	79/86 [07:43<00:40, 5.81s/it]
Batches: 93%	<div></div>	80/86 [07:49<00:34, 5.81s/it]
Batches: 94%	<div></div>	81/86 [07:55<00:29, 5.92s/it]
Batches: 95%	<div></div>	82/86 [08:00<00:22, 5.62s/it]
Batches: 97%	<div></div>	83/86 [08:07<00:17, 5.89s/it]
Batches: 98%	<div></div>	84/86 [08:12<00:11, 5.82s/it]
Batches: 99%	<div></div>	85/86 [08:19<00:05, 5.96s/it]
Batches: 100%	<div></div>	86/86 [08:20<00:00, 4.70s/it]
Batches: 100%	<div></div>	86/86 [08:20<00:00, 5.82s/it]

=====

✓ Successfully processed: 3002/3410

X Skipped (missing/error): 408/3410

First 10 skipped: 000000393282.jpg, 000000393282.jpg, 000000393282.jpg, 000000393469.jpg, 000000000285.jpg, 000000262440.jpg, 000000262440.jpg, 000000262440.jpg, 000000262440.jpg, 000000131386.jpg...

Extracted shapes:

Positive: (3002, 3584)

Negative: (3002, 3584)

Labels: (3002,)

Cached to: hidden\_states\_cache\_corrected/cache\_attribute\_recognition\_3410\_qwen2.npz

=====

TRAINING CCS PROBE



## Dataset split:

Train: 2101 samples (1062 pos, 1039 neg)  
Test: 901 samples (456 pos, 445 neg)  
Hidden dim: 3584

## TRAINING WITH MULTIPLE RANDOM RESTARTS

Trial 1/10: Loss = 0.004372  
Trial 2/10: Loss = 0.003486  
Trial 3/10: Loss = 0.004179  
Trial 4/10: Loss = 0.003619  
Trial 5/10: Loss = 0.003730  
Trial 6/10: Loss = 0.004231  
Trial 7/10: Loss = 0.003257  
Trial 8/10: Loss = 0.004764  
Trial 9/10: Loss = 0.004185  
Trial 10/10: Loss = 0.004715

## EVALUATION WITH BEST PROBE

Best loss: 0.003257

## Test Results:

Overall Accuracy: 84.7% (763/901)  
Positive samples: 79.2% (456 samples)  
Negative samples: 90.3% (445 samples)

✓ COMPLETE: attribute\_recognition → 84.7%

#####  
# CATEGORY: SPATIAL\_RECOGNITION  
#####

## EXTRACTING HIDDEN STATES: SPATIAL\_RECOGNITION

⚠ Cache disabled (use\_cache=False). Extracting new...

Processing 1030 samples in batches of 40

Searching in 2 image directories

LOADING MODEL: qwen2

Device: cuda

Loading checkpoint shards: 0%		0/5 [00:00<?, ?it/s]
Loading checkpoint shards: 20%		1/5 [00:01<00:07, 1.79s/it]
Loading checkpoint shards: 40%		2/5 [00:03<00:05, 1.70s/it]
Loading checkpoint shards: 60%		3/5 [00:05<00:03, 1.71s/it]
Loading checkpoint shards: 80%		4/5 [00:06<00:01, 1.71s/it]
Loading checkpoint shards: 100%		5/5 [00:07<00:00, 1.26s/it]
Loading checkpoint shards: 100%		5/5 [00:07<00:00, 1.46s/it]

✓ Model loaded successfully

Batches: 0%		0/26 [00:00<?, ?it/s]
Batches: 4%		1/26 [00:06<02:37, 6.30s/it]
Batches: 8%		2/26 [00:12<02:34, 6.43s/it]
Batches: 12%		3/26 [00:17<02:08, 5.57s/it]
Batches: 15%		4/26 [00:23<02:05, 5.70s/it]
Batches: 19%		5/26 [00:29<02:01, 5.80s/it]
Batches: 23%		6/26 [00:35<01:56, 5.81s/it]
Batches: 27%		7/26 [00:40<01:50, 5.80s/it]
Batches: 31%		8/26 [00:46<01:44, 5.79s/it]
Batches: 35%		9/26 [00:51<01:34, 5.58s/it]

Batches: 38%	<div><div></div></div>	10/26 [00:57<01:30, 5.66s/it]
Batches: 42%	<div><div></div></div>	11/26 [01:03<01:25, 5.72s/it]
Batches: 46%	<div><div></div></div>	12/26 [01:09<01:20, 5.73s/it]
Batches: 50%	<div><div></div></div>	13/26 [01:14<01:12, 5.60s/it]
Batches: 54%	<div><div></div></div>	14/26 [01:19<01:04, 5.38s/it]
Batches: 58%	<div><div></div></div>	15/26 [01:24<00:59, 5.41s/it]
Batches: 62%	<div><div></div></div>	16/26 [01:30<00:54, 5.42s/it]
Batches: 65%	<div><div></div></div>	17/26 [01:35<00:49, 5.45s/it]
Batches: 69%	<div><div></div></div>	18/26 [01:41<00:43, 5.47s/it]
Batches: 73%	<div><div></div></div>	19/26 [01:47<00:39, 5.60s/it]
Batches: 77%	<div><div></div></div>	20/26 [01:53<00:34, 5.71s/it]
Batches: 81%	<div><div></div></div>	21/26 [01:58<00:27, 5.54s/it]
Batches: 85%	<div><div></div></div>	22/26 [02:04<00:22, 5.67s/it]
Batches: 88%	<div><div></div></div>	23/26 [02:09<00:16, 5.66s/it]
Batches: 92%	<div><div></div></div>	24/26 [02:16<00:11, 5.79s/it]
Batches: 96%	<div><div></div></div>	25/26 [02:21<00:05, 5.64s/it]
Batches: 100%	<div><div></div></div>	26/26 [02:25<00:00, 5.24s/it]
Batches: 100%	<div><div></div></div>	26/26 [02:25<00:00, 5.60s/it]

=====

✓ Successfully processed: 880/1030  
X Skipped (missing/error): 150/1030

First 10 skipped: 000000393282.jpg, 000000000285.jpg, 000000262682.jpg, 000000000632.jpg, 000000262895.jpg, 000000043816.jpg, 000000043816.jpg, 000000043816.jpg, 000000043816.jpg, 00000000785.jpg...

Extracted shapes:  
Positive: (880, 3584)  
Negative: (880, 3584)  
Labels: (880,)

Cached to: hidden\_states\_cache\_corrected/cache\_spatial\_recognition\_1030\_qwen2.npz

=====

TRAINING CCS PROBE

=====

Dataset split:  
Train: 615 samples (294 pos, 321 neg)  
Test: 265 samples (126 pos, 139 neg)  
Hidden dim: 3584

=====

TRAINING WITH MULTIPLE RANDOM RESTARTS

=====

Trial 1/10:	Loss = 0.001152
Trial 2/10:	Loss = 0.001451
Trial 3/10:	Loss = 0.001440
Trial 4/10:	Loss = 0.001256
Trial 5/10:	Loss = 0.000941
Trial 6/10:	Loss = 0.001308
Trial 7/10:	Loss = 0.001329
Trial 8/10:	Loss = 0.001310
Trial 9/10:	Loss = 0.001230
Trial 10/10:	Loss = 0.001571

=====

EVALUATION WITH BEST PROBE

=====

Best loss: 0.000941

Test Results:  
Overall Accuracy: 80.4% (213/265)  
Positive samples: 75.4% (126 samples)

Negative samples: 84.9% (139 samples)

✓ COMPLETE: spatial\_recognition → 80.4%

Final Results:

object_detection	: 84.5%
attribute_recognition	: 84.7%
spatial_recognition	: 80.4%

Average	: 83.2%
---------	---------

=== Job finished at Fri Oct 24 02:02:53 CEST 2025 with exit code: 0 ===