Running O-Net on Windows with ISIC 2017 Dataset

1. Environment Setup

- Install Python 3.10, Conda, VSCode.
- Create Conda environment:
  conda create -n onet python=3.10 -y
  conda activate onet
- Install packages:
  conda install pytorch==2.0.1 torchvision==0.15.2 pytorch-cuda=11.7 -c pytorch -c nvidia
      pip install numpy==1.24.4 pandas scikit-learn matplotlib opencv-python tqdm albumentations segmentation_models_pytorch timm einops yacs

2. Clone and Prepare O-Net

- Clone repo: git clone https://github.com/ortonwang/O-Net.git
- Download pretrained Swin Transformer from given GDrive.
- Place it in pretrained_ckpt/. Create folders: checkpoints/, test_log/

3. Download and Organize ISIC 2017

- Download ISIC 2017 Training, Validation, Test images and GT CSVs.
- Organize:
  datasets/ISIC2017/images/{train,val,test}/
  datasets/ISIC2017/groundtruth/ISIC-2017_Training_Part3_GroundTruth.csv (and others)

4. Prepare CSV Labels

- Use this script to generate label CSVs:
  prepare_isic_labels_full_split.py
- It creates:
  datasets/ISIC2017/labels/train.csv
  datasets/ISIC2017/labels/val.csv
  datasets/ISIC2017/labels/test.csv

5. Clean Up Missing Images

- Use validate_csv_image_paths.py to filter out image_id rows with missing .jpg files.

6. Fix Code Issues

- Replaced A.Flip with A.HorizontalFlip in create_dataset.py
- Changed model.load_from2(...) to model.load_from(...)
- If loading pretrained weights, set:
  config.MODEL.PRETRAIN_CKPT = swin_multi_scale_dir
  model.load_from(config)

7. Training Command

- Run:

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```
python train_class_after_segmentation.py \
--imgs_train_path datasets/ISIC2017/images/train \
--labels_train_path datasets/ISIC2017/labels/train.csv \
--imgs_val_path datasets/ISIC2017/images/val \
--labels_val_path datasets/ISIC2017/labels/val.csv \
--imgs_test_path datasets/ISIC2017/images/test \
--labels_test_path datasets/ISIC2017/labels/test.csv \
--cfg configs/swin_tiny_patch4_window7_224_lite.yaml \
--checkpoint checkpoints/ \
--device cuda \
--batch_size 8 \
--end_epoch 20 \
--save_name ISIC2017_run
```