Running LVSRFIT:

Note: Everything in this file is all relative to the `model` directory.

Note: When specifying a `model name` in any of the below commands, enter `paper_model_final_pos_enc_tril` for the most up-to-date model

Dataset Download

First download the full 82GB vimeo septuplet 90K dataset from http://toflow.csail.mit.edu/.

Extract the contents of the zip and place into the `model` folder. The directory should be named `vimeo_septuplet`, and it should contain a `sequences` subdirectory.

Environment

First install the required python packages `pip install -r requirements.txt`

Then use the below command to install torch with CUDA: `pip install torch==1.10.0+cu113 torchvision==0.11.1+cu113 -f https://download.pytorch.org/whl/cu113/torch_stable.html`

Data Preparation

Data preparation must be run before training or evaluation is run: `python LVSRFIT.py prepare_data`

Commands

Train the model:

- Command: `python LVSRFIT.py train <model_name> <training_set_path>`
- Example: `python LVSRFIT.py train paper_model_final_pos_enc_tril .\vimeo_septuplet\sep_trainlist.txt`

Evaluate the model's accuracy:

- Command: `python LVSRFIT.py eval <model_name> <evaluation_set_path>`
- Example: `python LVSRFIT.py eval paper_model_final_pos_enc_tril .\vimeo_septuplet\sep_testlist.txt`

Continuously display inference outputs:

- Command: `python LVSRFIT.py display <model_name> <evaluation_set_path>`
- Example: `python LVSRFIT.py display paper_model_final_pos_enc_tril .\vimeo_septuplet\sep_testlist.txt`

Display inference outputs for a specified Vimeo file:

- Command: `python LVSRFIT.py display_one <model_name> <vimeo path> <sequence path> <optional: input sequence length>`

- Example: `python LVSRFIT.py display_one paper_model_final_pos_enc_tril .\vimeo_septuplet 00096/0674 2`

Calculate the number of FPS the model can run at

- Command: `python LVSRFIT.py fps_test <model_name> <test_set_path>`
- Example: `python LVSRFIT.py fps_test paper_model_final_pos_enc_tril .\vimeo_septuplet\sep_testlist.txt`

View a plot of all the Loss values in a log file

- Command: `python LVSRFIT.py observe_log <tag> <log_path>`
- Example: `python LVSRFIT.py observe_log Loss .\logs\2023-08-05-10-33-11_paper_model_final.txt`