THIS REPO CONTAINS THE THREE NETWORKS THAT CONSIST THE PIPELINE OF OUR PROJECTS.

1. Sketch2image: implementations of the work SketchyGAN.

We trained a model and upload the model as /ckpt_wgan/stage1/model.ckpt-344999 .

Prerequisites

- Python 3, NumPy, SciPy, OpenCV 3
- Tensorflow(>=1.7.0)
- A recent NVIDIA GPU

Preparations

- The path to data files needs to be specified in `input_pipeline.py`. See below for detailed information on data files.
- You need to download ["Inception-V4 model"](http://download.tensorflow.org/models/inception_v4_2016_09_09.tar.gz), unzip it and put the checkpoint under `inception_v4_model`.
- The Sketchy Database can be found [here](http://sketchy.eye.gatech.edu/).
- Run the script /data_processing/converter.py to process the downloaded data into proper format.
- Use ‘extract_images.py' under ‘data_processing’ to extract images from tfrecord files. You need to specify input and output paths. The extracted images will be sorted by class names.

Configurations

To test the model, change ‘mode’ from ‘train’ to ‘test’ and fill in ‘resume_from’ in ‘main_single.py’.

2. Image2detection: contains the code and trained model from Faster-RCNN.

Prerequisites

- install tensorflow
  conda install -c anaconda tensorflow-gpu
- some essential lib
  sudo apt-get install protobuf-compiler python-pil python-lxml python-tk
  pip install --user Cython
  pip install --user contextlib2
  pip install --user jupyter
  pip install --user matplotlib
- install protobuf
  cd research/
  protoc object_detection/protos/*.proto --python_out=.

- add library to pythonpath
  export PYTHONPATH=$PYTHONPATH:`pwd`:`pwd`/slim
- a simple test all things well
  python object_detection/builders/model_builder_test.py

run faster rcnn api

  cd object_detection/
  python object_detection_api.py /test/image/path

  e.g.: python object_detection_api.py ./n02691156_9491.jpg

obtain the result

  demo.png

3. Img2poem: this folder contains the code of poem generation from images

test images are under the folder images/

pre-trained models are in model/, including image feature extraction model (object.params, scene.params, Sentiment.params) and poem generation model (ckpt/).

code for testing are in src/
  to run the code
  test.py

  To test how much time it cost to generate a poem for an image

  def get_poem(image_file):
  """Generate a poem from the image whose filename is `image_file`

   Parameters
  ----
  image_file : str
  Path to the input image

  Returns
  ----
  str
  Generated Poem
  """