PSGAN Documentation

Evaluation Report

PSGAN is trained and evaluated using following different procedures:

Hyperparameters setting

All the parameters are kept same as mentioned in the paper. Values of these parameters are:

Parameter	Value
Epochs (trained model)	50
Epochs (additional training)	10
Batch_size	1
Image_size	256x256
Learning rate (both G and D)	0.0002
Adam Optimizer β1	0.5
Adam Optimizer β2	0.999
Image A loss factor λ_A	10
Image B loss factor λ_B	10
Identity loss λ_{idt}	0.5
Perceptual loss λ_{per}	0.005
Color histogram loss factor λ_{his}	1

Dataset

MT (Makeup Transfer) dataset is used to train the model. It has 2719 makeup images and 1115 without makeup images. During training and evaluation, all the images are resized to 256x256.

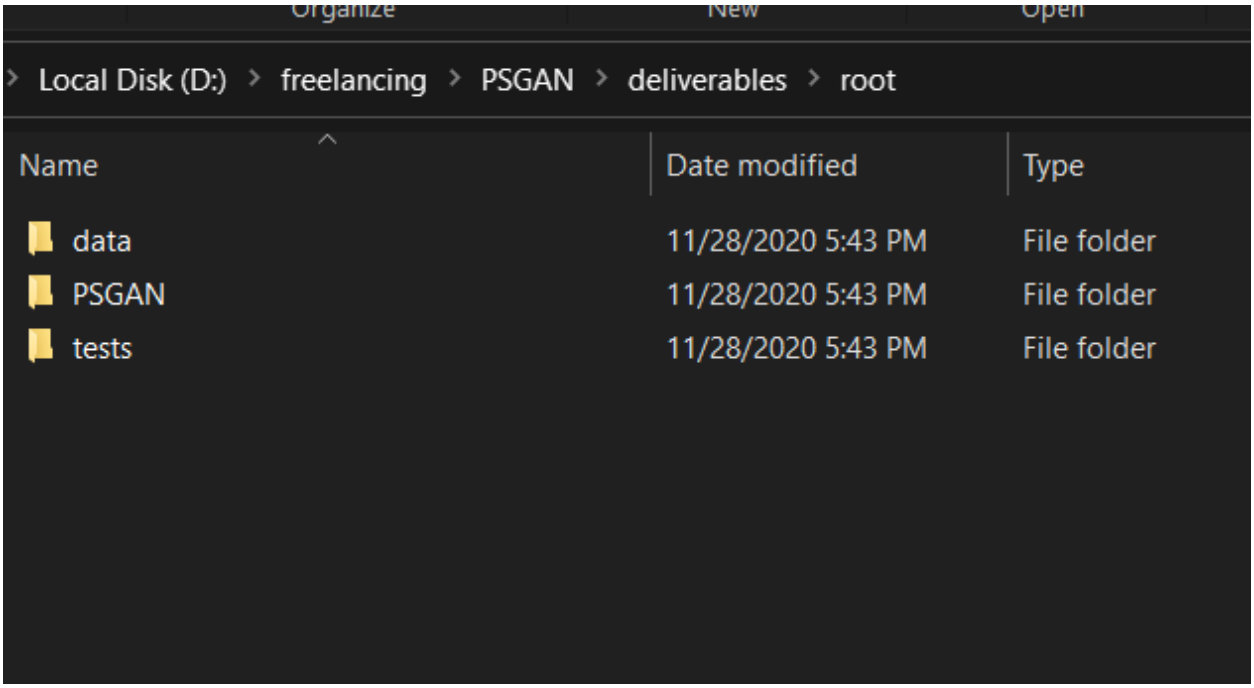
Training procedure

Authors have provided the pre-trained model which is trained for 50 epochs. This model is used to perform additional training on the same dataset as used by official implementation. It is trained for an additional of 10 epochs and training is manually stopped by visualizing loss curves. Since all the loss values are converged, no additional training is required on the same dataset.

Loss curves can be visualized in PSGAN/log which contain graphs of all generator and discriminator networks.

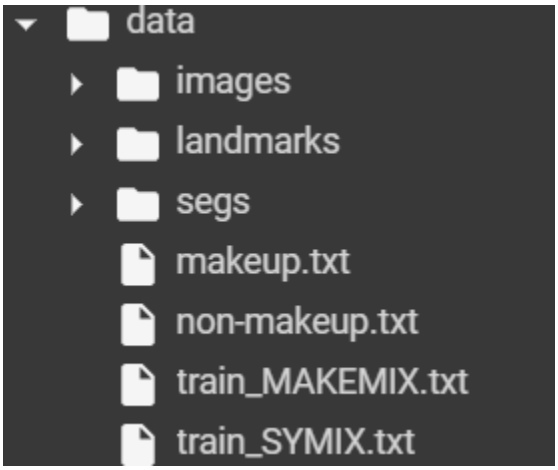
Setting up environment

Create a root folder and extract the zip file ‘PSGAN.zip’ into the root folder. Download the MT-Dataset-github.zip and extract it as ‘data’ in the same folder. Next, create folders ‘tests’ and ‘results’ in the root folder. Contents of the root folder will be like this:

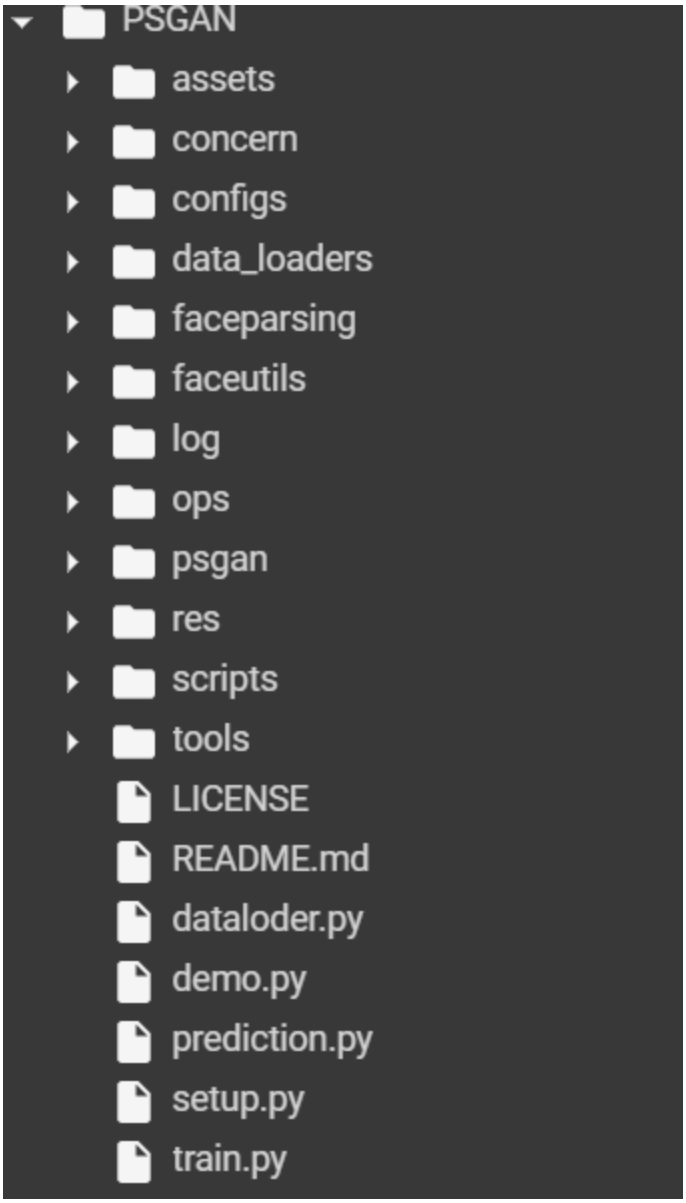


Contents of each folder will be:

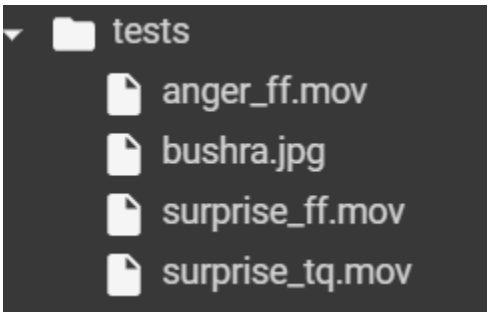
data



PSGAN


PSGAN
assets
concern
configs
data_loaders
faceparsing
faceutils
log
ops
psgan
res
scripts
tools
LICENSE
README.md
dataloder.py
demo.py
prediction.py
setup.py
train.py

Tests


tests
anger_ff.mov
bushra.jpg
surprise_ff.mov
surprise_tq.mov

Installing packages

You can install dependencies using:

```
pip install -r requirements.txt
```

Evaluating PSGAN

Go to the PSGAN folder using:

```
cd PSGAN
```

You can get predictions using command:

```
python prediction.py --mode 0 --inputpath bushra.jpg --useseg 0 --device cuda
```

Arguments:

mode: 0 for image, 1 for video and 2 for livecam

inputpath: file present in the folder 'tests'

reference_dir : Path to the reference file . You can change reference file in assets/images/makeup. And then use it by passing argument –reference_dir assets/images/makeup

useseg: Variable whether to use face segmentation or not. 0 is for no segmentation and 1 sets it on.

device: 'cuda' for gpu/multi-gpu . 'cpu' for cpu

model_path: Location for generator. By default it assets/models/G.pth

Training

You can train the PSGAN using:

```
python train.py
```

It looks for makeup and non-makeup folders in 'data' folder.