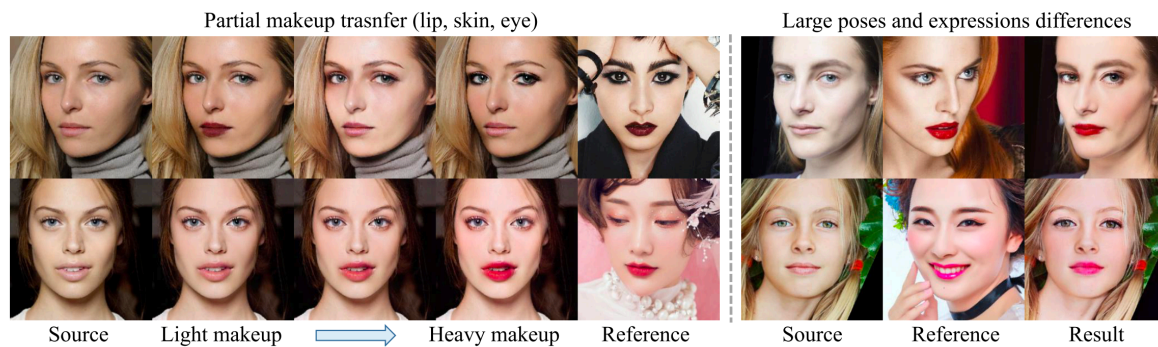

PSGAN

Code for our CVPR 2020 **oral** paper “PSGAN: Pose and Expression Robust Spatial-Aware GAN for Customizable Makeup Transfer”.

Contributed by Wentao Jiang, Si Liu, Chen Gao, Jie Cao, Ran He, Jiashi Feng, Shuicheng Yan.

This code was further modified by Zhaoyi Wan.

In addition to the original algorithm, we added high-resolution face support using Laplace transformation.



Checklist

- ☒ more results
- ☐ video demos
- ☐ partial makeup transfer example
- ☐ interpolated makeup transfer example
- ☒ inference on GPU
- ☒ training code

Requirements

The code was tested on Ubuntu 16.04, with Python 3.6 and PyTorch 1.5.

For face parsing and landmark detection, we use dlib for fast implementation.

If you are using gpu for inference, *do* make sure you have gpu support for dlib.

Test

Run `python3 demo.py` or `python3 demo.py --device cuda` for gpu inference.

Train

1. Download training data from link, and move it to sub directory named with “data”. (For BaiduYun users, you can download the data here. Password: rtdd)

Your data directory should be looked like:

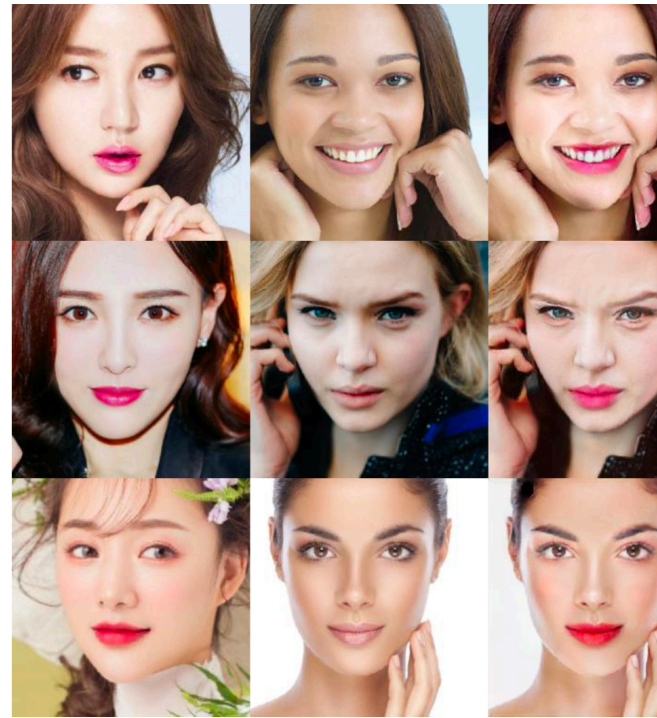
1	data	—
2	images	
3		— makeup
4		— non-makeup —
5	landmarks	
6		— makeup
7		— non-makeup —
8	makeup.txt	—
9	non-makeup.txt	—
10	segs	
11		— makeup
12		— non-makeup

2. `python3 train.py`

Detailed configurations can be located and modified in `configs/base.yaml`, where command-line modification is also supported.

Note: Although multi-GPU training is currently supported, due to the limitation of pytorch data parallel and gpu cost, the number of adopted gpus and batch size are supposed to be the same.

More Results

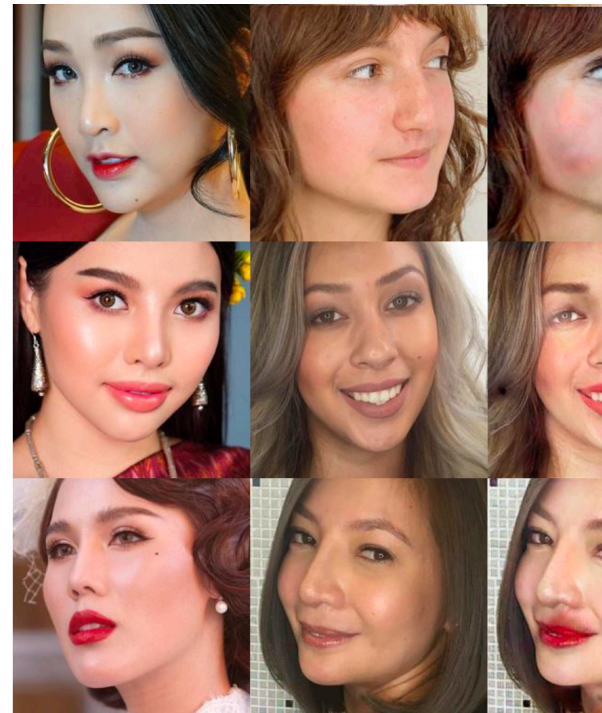


MT-Dataset (frontal face images with neutral expression)

Reference

Source

BeautyGA

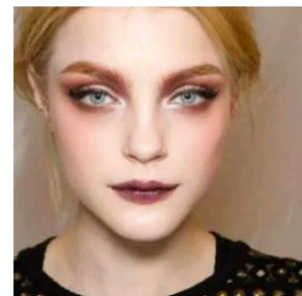


MWild-Dataset (images with different poses and expressions)

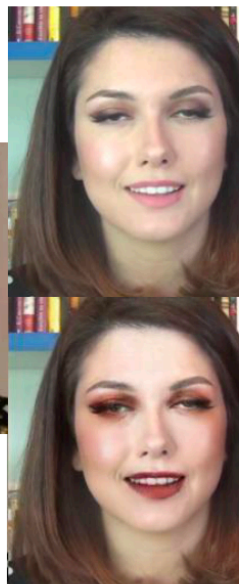
Reference

Source

Beauty



Reference



Video Makeup Transfer (by simply applying PSGAN on each frame)

Citation

Please consider citing this project in your publications if it helps your research. The following is a BibTeX reference. The BibTeX entry requires the url LaTeX package.

```
1 @InProceedings{Jiang_2020_CVPR,  
2   author = {Jiang, Wentao and Liu, Si and Gao, Chen and Cao, Jie and He  
3     , Ran and Feng, Jiashi and Yan, Shuicheng},  
4   title = {PSGAN: Pose and Expression Robust Spatial-Aware GAN for  
5     Customizable Makeup Transfer},  
6   booktitle = {IEEE/CVF Conference on Computer Vision and Pattern  
7     Recognition (CVPR)},  
8   month = {June},  
9   year = {2020}  
10 }  
11  
12 @article{liu2021psgan++,  
13   title={PSGAN++: robust detail-preserving makeup transfer and removal  
14     },  
15   author={Liu, Si and Jiang, Wentao and Gao, Chen and He, Ran and Feng,  
16     Jiashi and Li, Bo and Yan, Shuicheng},  
17   journal={IEEE Transactions on Pattern Analysis and Machine  
18     Intelligence},  
19   volume={44},  
20   number={11},  
21   pages={8538--8551},  
22   year={2021},  
23   publisher={IEEE}
```

Acknowledge

Some of the codes are built upon face-parsing.PyTorch and BeautyGAN.

You are encouraged to submit issues and contribute pull requests.