

Supplementary Material of PSGAN: Pose and Expression Robust Spatial-Aware GAN for Customizable Makeup Transfer

1. Qualitative Results

We compare PSGAN with state-of-the-art makeup transfer methods BeautyGAN [2] and LADN [1] whose code is released. Our Makeup-Wild (M-Wild) dataset and Makeup Transfer (MT) dataset [2] are adopted for testing. For the baselines, we use the code and pre-trained model released by authors and adopt the hyperparameters that claimed in their papers. Figure 1 shows the comparison on MT dataset. Since the images in the MT dataset are mostly well-aligned and have neutral expressions, BeautyGAN can generate nice results when images have the same expressions and illumination conditions. Different from other makeup transfer methods, LADN utilizes facial landmarks instead of face parsing maps as extra facial information, and it also uses multiple overlapping local discriminators on different parts of the images. Due to this design, LADN only works well on images that contain frontal faces and clean backgrounds, as shown in their paper and the last row of Figure 1. While our PSGAN is able to generate realistic transferred results that retain the details of makeup styles from reference images. Figure 2 shows the comparison on the new M-Wild dataset. The new dataset contains images with various poses and expressions which is challenging for current methods. Both BeautyGAN and LADN tend to apply the makeup in wrong regions, while our PSGAN can still generate nice results.

2. Video Makeup Transfer

To examine the effectiveness of our method, we simply perform makeup transfer on every frame of some videos. The transferred videos are in the zip file. By incorporating the new design, PSGAN is able to generate nice and stable results.

References

- [1] Qiao Gu, Guanzhi Wang, Mang Tik Chiu, Yu-Wing Tai, and Chi-Keung Tang. Lادن: Local adversarial disentangling network for facial makeup and de-makeup. In *ICCV*, 2019. 1
- [2] Tingting Li, Ruihe Qian, Chao Dong, Si Liu, Qiong Yan, Wenwu Zhu, and Liang Lin. Beautygan: Instance-level facial makeup transfer with deep generative adversarial network. In *ACM MM*, 2018. 1

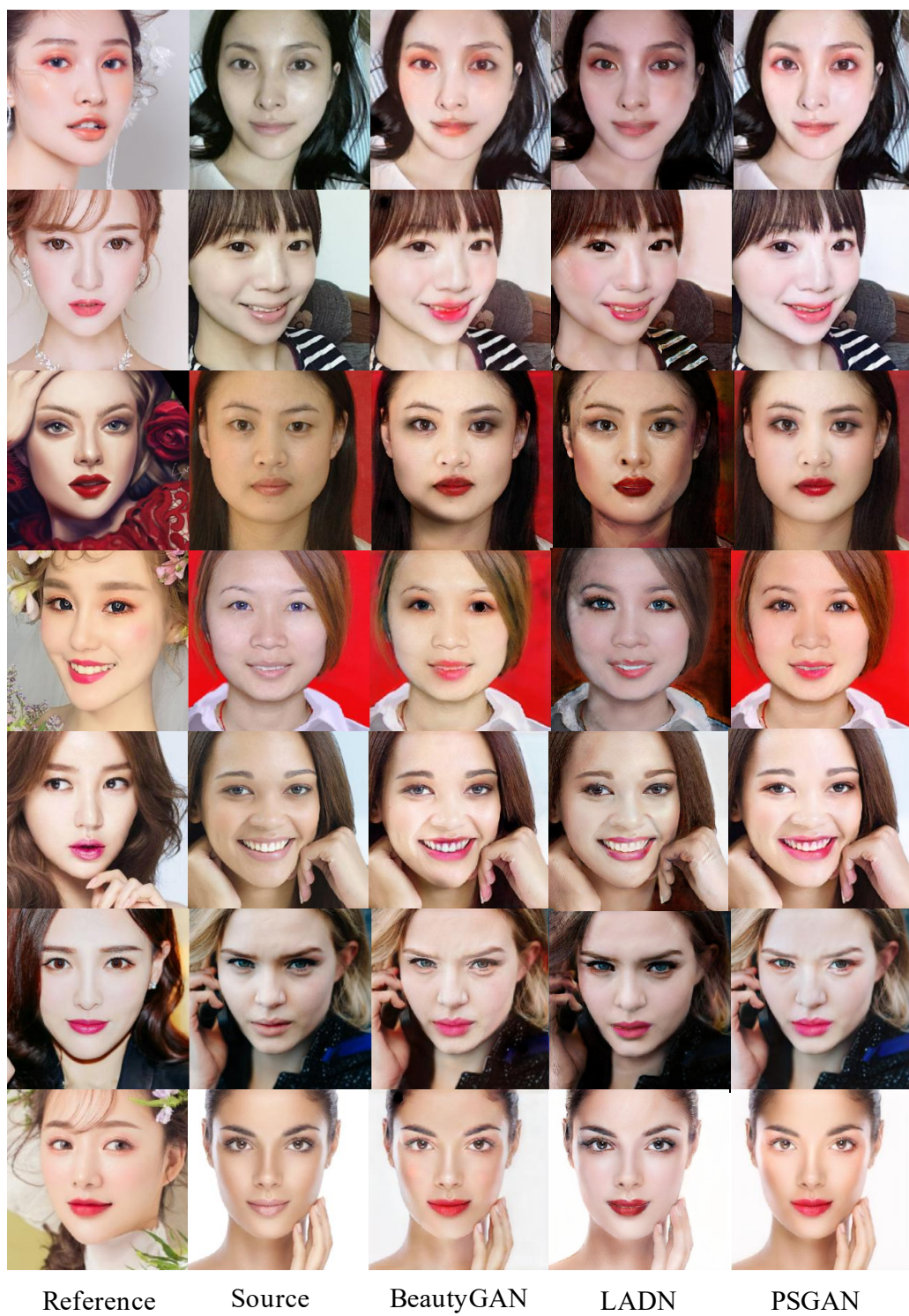


Figure 1. Qualitative comparison on MT test set.



Figure 2. Qualitative comparison on M-Wild test set.