Weekly Report

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***Abstract*—This week I mainly put my effort on finding materials of SAR image contest and reading a new paper called StarGAN, which is accepted by CVPR 2018 as oral paper.**

I. Paper Reading

RECENT studies have shown remarkable success in image-to-image translation for two domains. However, existing approaches have limited scalability and robustness in handling more than two domains, since different models should be built independently for every pair of image domains. To address this limitation, they propose StarGAN, a novel and scalable approach that can perform image-to-image translations for **multiple domains using only a single model.** Overall, the contributions are as follows:

- They propose StarGAN, a novel generative adversarial network that learns the mappings among multiple domains using only a single generator and a discriminator, training effectively from images of all domains.
- They demonstrate how we can successfully learn multidomain image translation between multiple datasets by utilizing a mask vector method that enables StarGAN to control all available domain labels.
- They provide both qualitative and quantitative results on facial attribute transfer and facial expression synthesis tasks using StarGAN, showing its superiority over baseline models.

The author did complete experiments to show StarGAN's priority to other StoA models, including DIAT, CycleGAN, IcGAN,etc. This is a really heuristic work which I believe will influence following studies a lot. Fig. 1 is the Comparison between cross-domain models and StarGAN. Fig. 2 is the StarGAN training strategy.

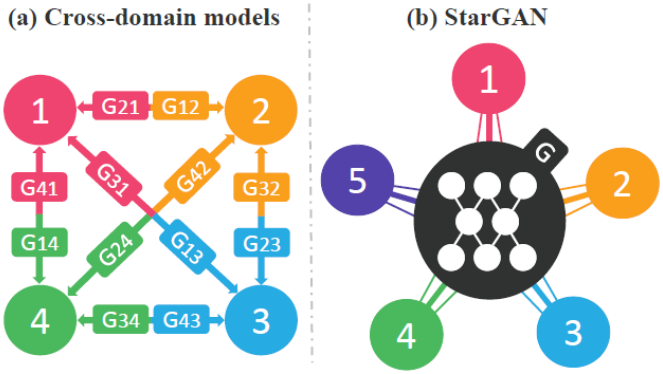

Fig. 1: Comparison between cross-domain models and StarGAN

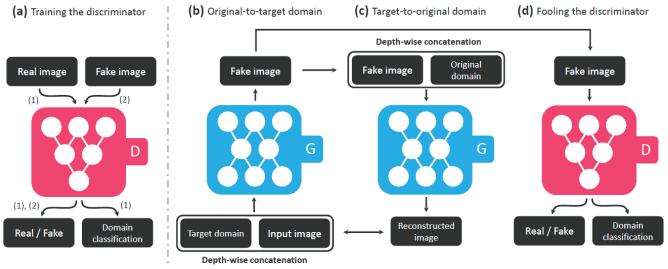

Fig. 2: StarGAN training strategy