

# **Consistent Embedded GAN for Image-to-Image Translation**

Generative Adversarial Networks (GANs) have achieved remarkable progress in image-to-image translation tasks. However these methods have the common problem that lacking the ability to generate both perceptually realistic and diverse images in the target domain. To solve this problem, here we propose a model named Consistent Embedded Generative Adversarial Networks (CEGAN) for image-to-image translation. It aims to learn conditional generation models for generating perceptually realistic outputs and capture the full distribution of potential multiple modes of results by enforcing tight connections in both the real image space and latent space. To achieve realism, unlike existing GANs models that their discriminators attempt to differentiate between real images from the dataset and fake samples produced by the generator, the discriminator in our model distinguishes the real images and fake images in the latent space to reduce the impact of the redundancy and noise in generated images. By this way, our model produces more diverse and realistic results in the target domain.