Group I project

Star-GAN v2: Diverse Image Synthesis for Multiple Domains

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October 12, 2020

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Abstract

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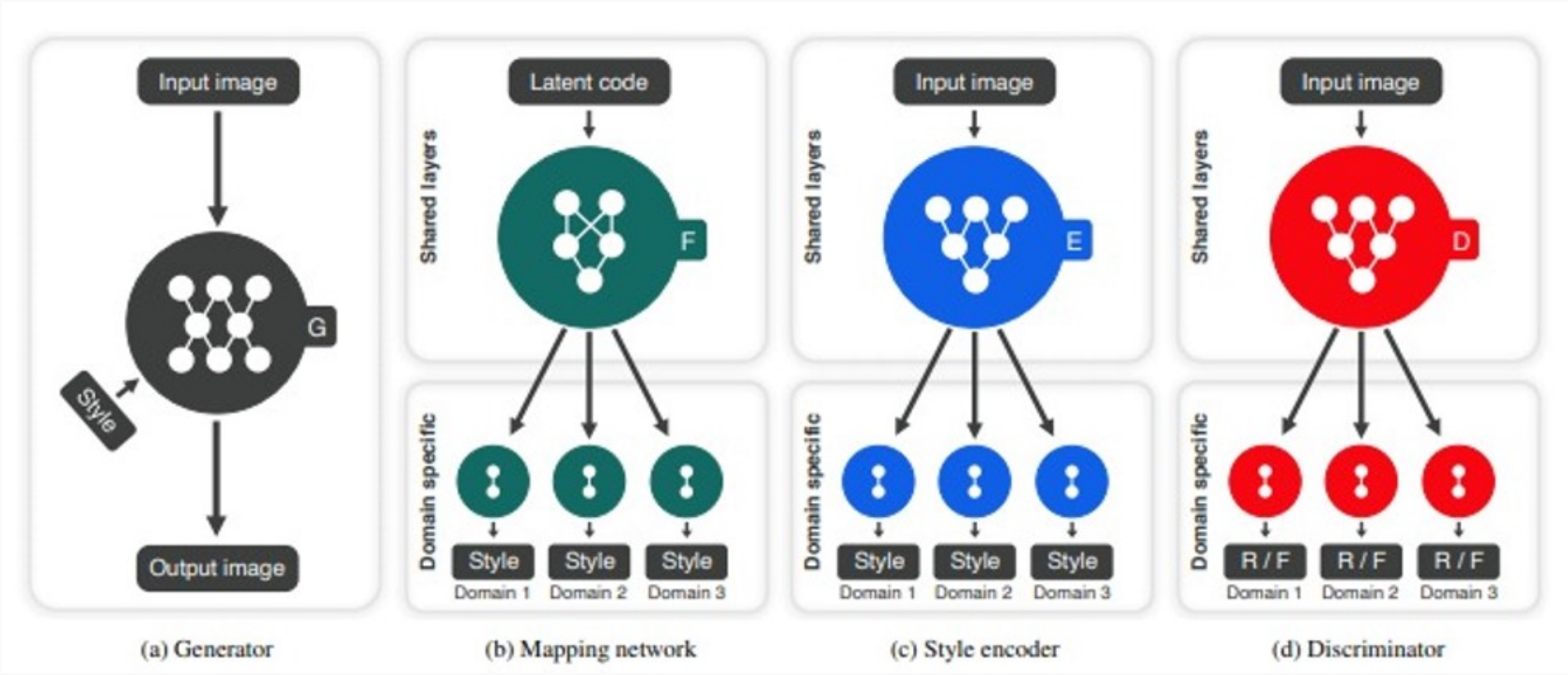


(a) Generator (b) Mapping network (c) Style encoder (d) Discriminator

A good image-to-image translation model should learn a mapping between different visual domains while satisfying the following properties: (1) diversity of generated images (2) scalability over multiple domains

Using StarGAN v2, a single framework that tackles both the above issues and shows significantly improved results over the baselines.

Justification and Feature

Justification

1.CITATION : 37 +

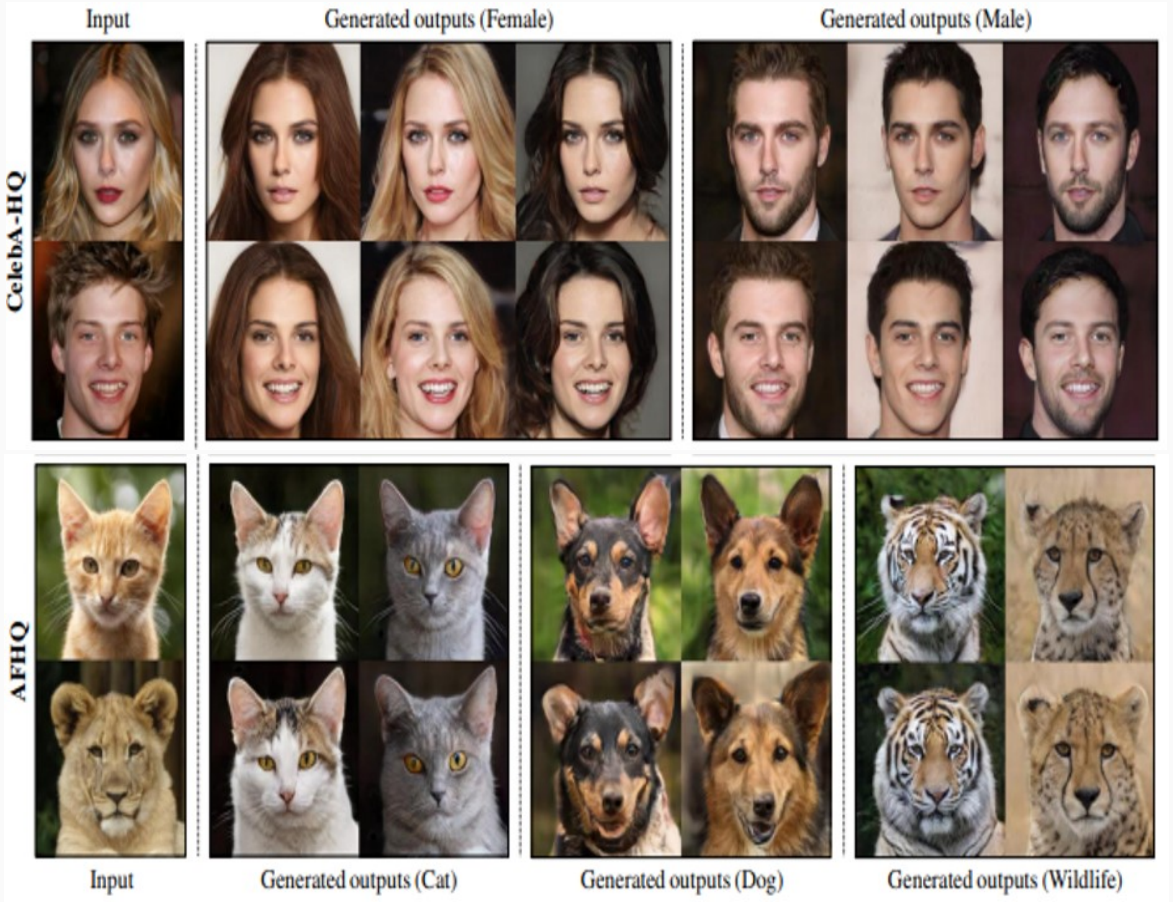
2.MONTH OF PUBLICATION : JANUARY /2020

3.LINK : https://openaccess.thecvf.com/content_CVPR_2020/html/Choi_StarGAN_v2_Diverse_Image_Synthesis_for_Multiple_Domains_CVPR_2020_paper.html

4.FIELD : COMPUTER VISION

5.GITHUB : https://github.com/clovaai/stargan-v2/blob/master/README.md

Features



Automatically learns to synthesize images considering multiple domains and diverse styles and Generates images reflecting diverse styles of reference images. Styles include hairstyles, makeup, and beards for humans, and breeds and fur patterns for animals

Framework

Framework

The generator translates an input image into an output image reflecting the domain-specific style code

The mapping network transforms a latent code into style codes for multiple domains, one of which is randomly selected during training

The style encoder extracts the style code of an image, allowing the generator to perform reference guided image synthesis

The discriminator distinguishes between real and fake images from multiple domains

Dataset(Original and New)

Datasets

1.Dataset has been gathered from CalebA-HQ amounting up to 200k+ high quality pictures.

- Separated into two domains of male and female
- Size: 2.5G
- Source:

`https://drive.google.com/drive/folders/0B4qLcYyJmiz0TXY1NG02bzZVRGs`

2.Other dataset has been gathered from AFHQ amounting up to 15k+ high quality pictures(separated into three domains of cat, dog and wildlife)

3.Test and Train split is based on 33% and 67% respectively 4.For a fair comparison, all images are resized to 256×256 resolution for training

New Datasets

New Dataset will be based upon self generated images

- Separated into two domains of male and female
- It will be tested with STARGAN-V2 trained upon Celab-HQ pretrained model
- Each set of data will contain a resized image of 256 x 256 resolution as required by the pre-trained model

Thank you!