

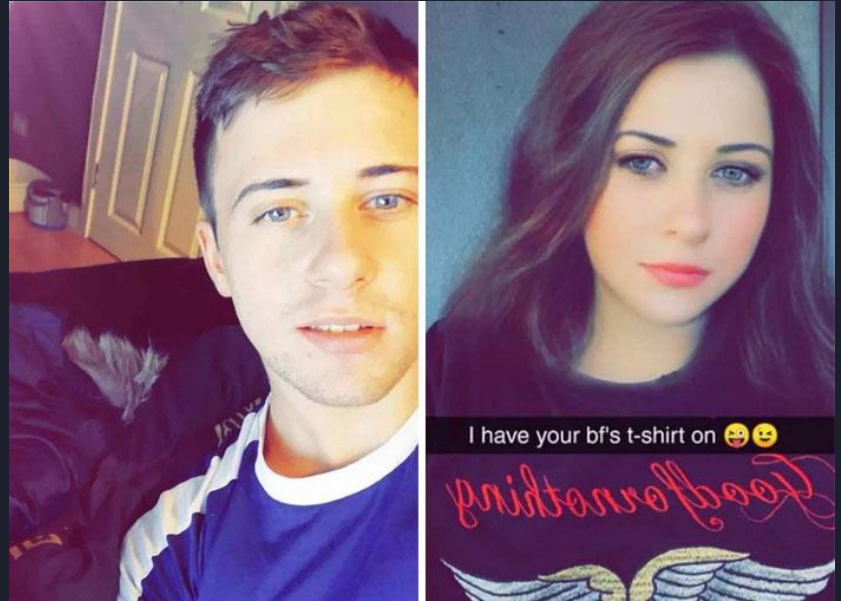


TaikaGAN: Two-Domain Image-to-image Translation for Anime-styled Illustrations

Bautista, Domingo, Tan

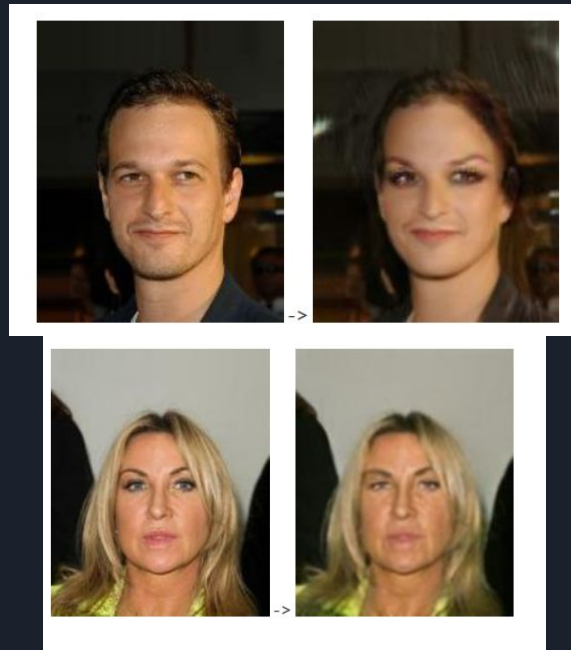
Motivation

Messaging app Snapchat has a filter that enables users to see a gender-swapped version of themselves.



Motivation

Gender-swapping has
been implemented via
CycleGAN on the CelebA
dataset



Source: <https://yanjia.li/gender-swap-and-cyclegan-in-tensorflow-2-0>

Challenge

What if it can be
done to anime
characters?

Nyotaika 女体化



anime: Ore, Twintail ni Narimasu. 俺、ツインテールになります。

Nantaika 男体化



anime: Mahou Shoujo Ore 魔法少女 俺



Ideally, this is what happens.

However, obtaining paired data is impractical.

Source: プリズム☆ま〜じカルPRISM Generations !



Dataset

Raw images are obtained from visual novel site Getchu¹

Images are then manually sorted according to gender, with some quality control enforced

Sorted images are cropped via a face detector for anime/manga², and then scaled to **256x256**

Badly cropped images are removed

Image count:

Male ~1,200

Female ~4,200

¹<http://www.getchu.com>

²https://github.com/nagadomi/lbpcascade_animeface

Dataset

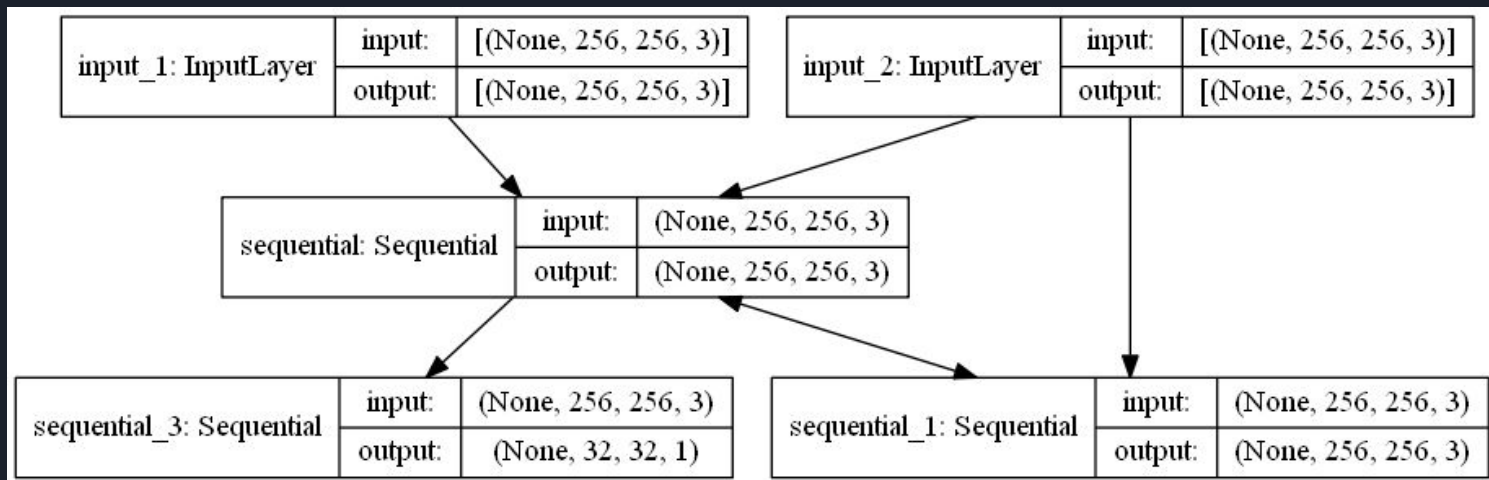


Sample of female faces

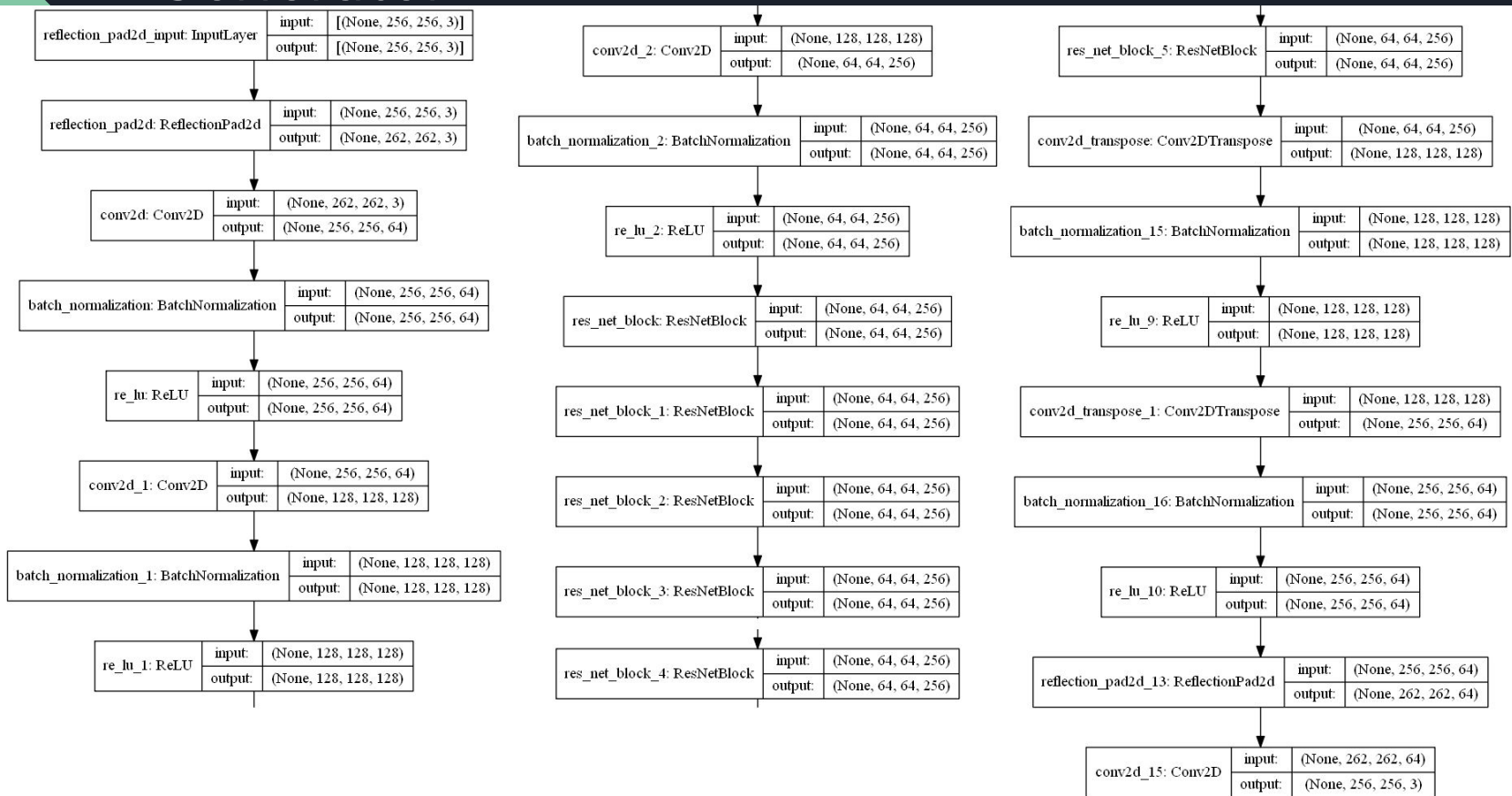


Sample of male faces

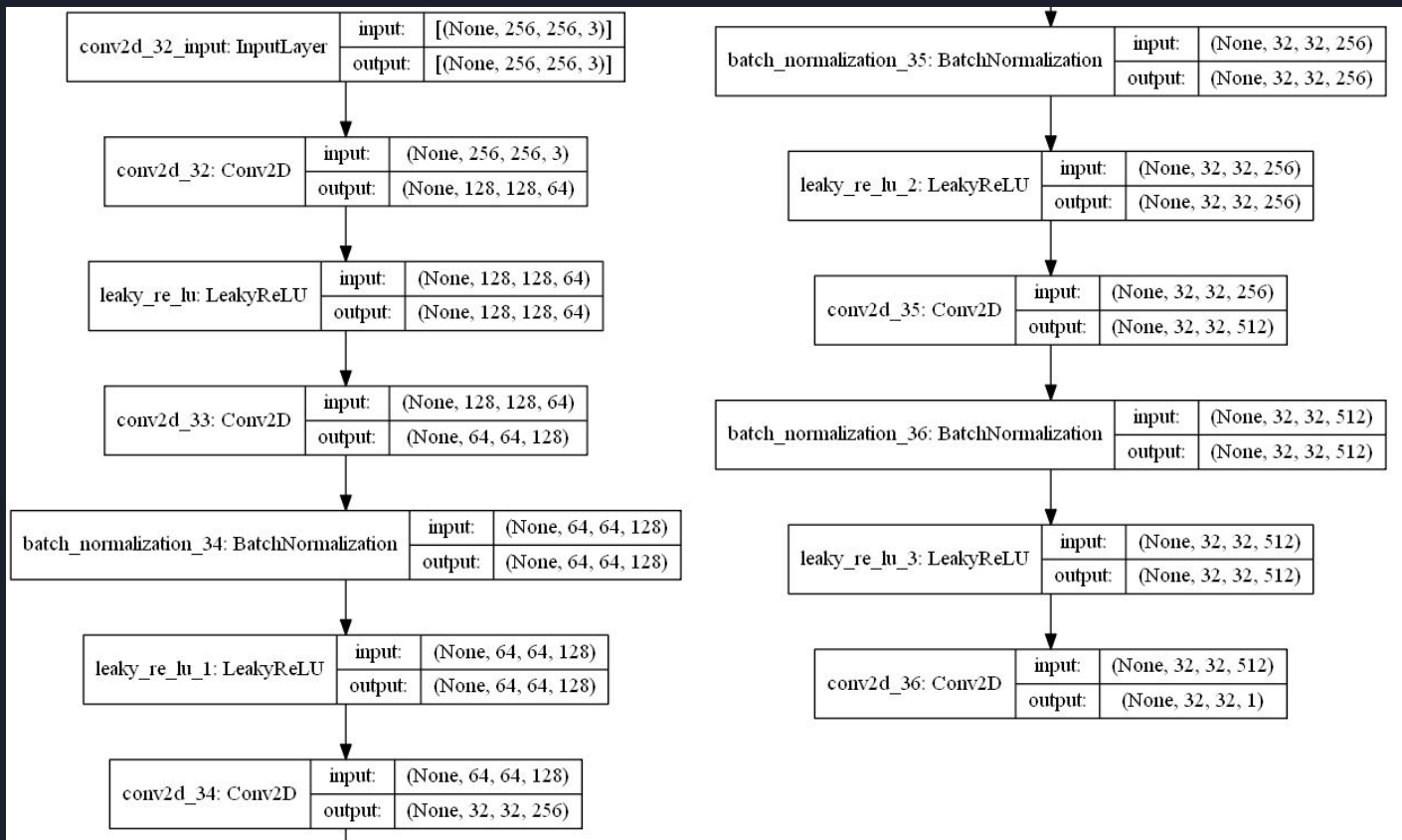
Top-level Architecture



Generator



Discriminator



Results

Problem: model discriminator ended up memorizing the dataset and the generator did not converge on an acceptable result, due to the size of the dataset.

