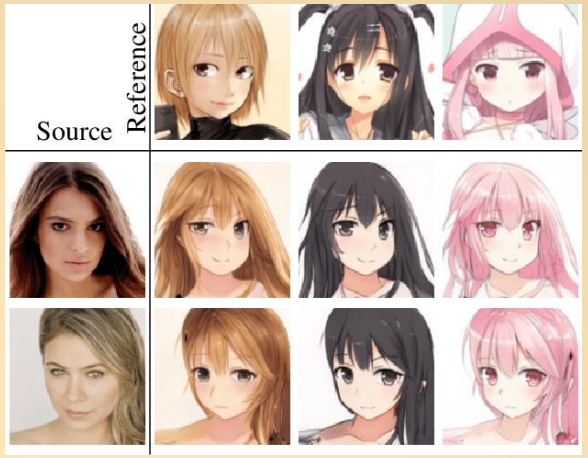
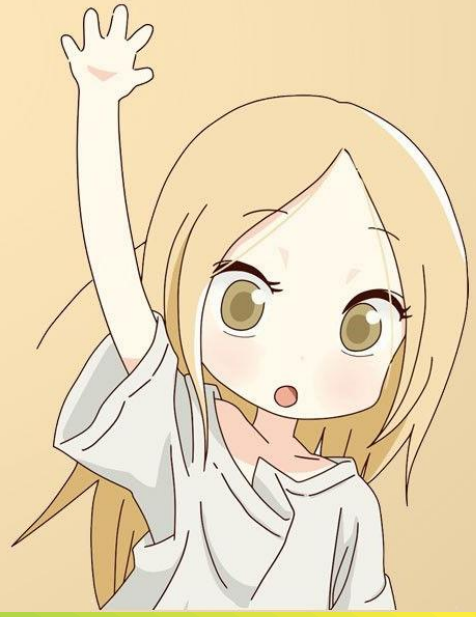
ANIME FACE GENERATION

BY: K.KRESHANTH 1602-20-748-015

G.VENKANNA 1602-20-748-058





Problem statement

- With the increasing popularity of anime in recent years.
- There is a growing demand for creating new anime characters and enhancing existing ones.
- One way to meet this demand is through the use of generative models, which can automatically generate new images based on a given dataset.

Abstract

- We propose a model of a deep convolutional generative adversarial network (DCGAN) for generating anime faces.
- By training the DCGAN on a large dataset of anime face images, we aim to generate new anime faces that are visually similar to the original dataset.
- DCGAN is effective in generating high-quality images which are realistic and appealing anime faces, and can be used as a tool for generating new anime characters or enhancing existing ones.

Algorithm

- Anime face generation using DCGAN uses a specific algorithm that combines two neural networks -
- a generator network and a discriminator network.
- The generator network is trained to generate new anime face images from random noise.
- While the discriminator network is trained to distinguish between real anime face images and the fake images generated by the generator network.

Algorithm

- The two networks are trained simultaneously in an adversarial fashion.
- With the generator network trying to fool the discriminator network and the discriminator network trying to correctly identify the real anime faces.
- This iterative training process results in the generator network learning to generate increasingly realistic anime face images that can potentially be used for various applications such as character creation or even anime production.

About data set:

This is a dataset consisting of 21551 anime faces scraped from www.getchu.com, which are then cropped using the anime face detection algorithm in https://github.com/nagadomi/lbpcascade_animeface. All images are resized to 64 * 64 for the sake of convenience



Methodology

- **Data collection:** Collect a dataset of anime face images. Some popular datasets include Danbooru Faces, Anime Face Dataset, and Cartoon Set.

- **Data preprocessing:** Preprocess the dataset by resizing the images, normalizing pixel values, and converting to grayscale or RGB format as required.

Methodology

- **Training:** Train the DCGAN using the preprocessed dataset.
- **Evaluation:** Evaluate the performance of the trained DCGAN using metrics such as visual inspection, Frechet Inception Distance (FID), and Inception Score.
- **Image generation**: Use the trained DCGAN to generate new anime face images by inputting random noise to the generator network and obtaining the generated anime face images as output.

Methodology

- **Fine-tuning:** Fine-tune the DCGAN by adjusting hyperparameters such as learning rate, batch size, and number of epochs to improve its performance.
- **Deployment:** Deploy the DCGAN for various applications such as character creation or anime production.

Applications in real life

+ Creation of new anime characters for movies, TV shows, and video games.
+ In the development of virtual assistants or chatbots with anime-inspired avatars.
+ The generated anime faces can be used for artistic purposes.
+ As tool for exploring the diversity and complexity of the anime visual style.

Conclusion

- Anime Face Generation using DCGAN is a powerful technique for generating high-quality anime faces.
- Anime Face Generation using DCGAN is a fascinating area of research that has numerous practical applications.
- Such as in the video game and anime industries. With continued advancements in deep learning and computer vision, we can expect to see even more impressive results in the future.


THANK YOU!
Copyright(c) mattcha 1/1/08 Please do not use or print without permission http://www.mattcha.deviantart.com