Converting Real Photographs to Chinese Landscape Painting Style with CycleGAN and DCGAN

Link to github: https://github.com/urielTT/AI-Project

Code reference

Referred to other authors' base code frameworks as a starting point, and modified and optimized them accordingly to the specific needs and goals of my project.

CycleGAN

Existing code frameworks were referenced and based on which necessary modifications and adjustments were made to suit specific research needs and objectives.

reference source: Monet-CycleGAN/cyclegan.ipynb at master · NitishaS-812k/Monet-CycleGAN (github.com)

DCGAN

Existing code frameworks were referenced and based on which necessary modifications and adjustments were made to suit specific research needs and objectives.

reference source: Monet-paintings-DCGAN-Deeplearning/monet-painting-gan-4.ipynb at main · shriyutha/Monet-paintings-DCGAN-Deeplearning (github.com)

LLM disclaimer

1. When some of the code was running incorrectly, I tried to get help from ChatGPT.
2. I used ChatGPT to help me understand some complex code.
3. I asked ChatGPT to give me some advice on the use of specific vocabulary.

Dataset

chinese landscape painting
A folder containing thousands of Chinese paintings

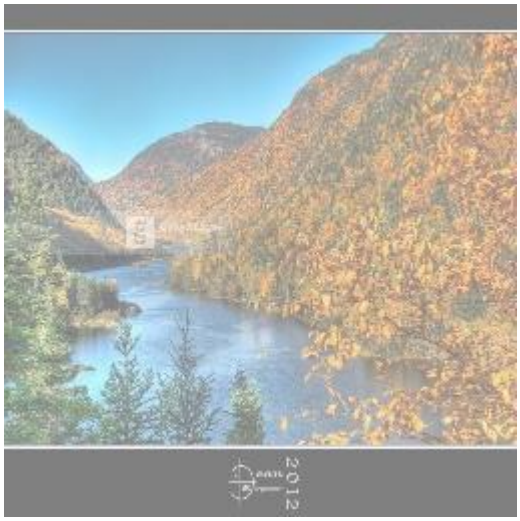
Photo
A folder containing thousands of photos of real landscapes.

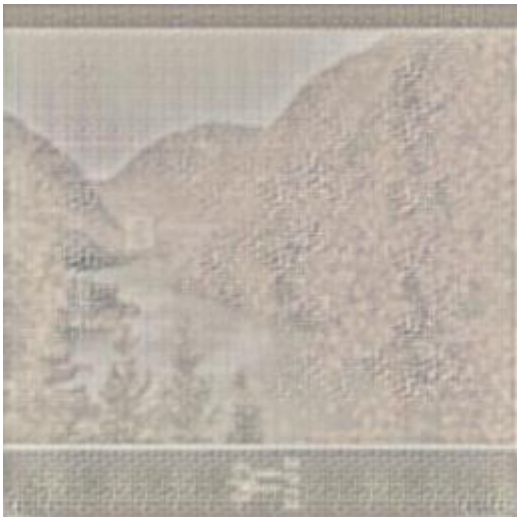
CycleGAN.ipynb
A network containing two generators and two discriminators enables it to learn to convert bidirectional between landscape photos and landscape paintings.

DCGAN.ipynb
A four-layer convolutional neural network with LeakyReLU activation function as a discriminator, and an inverse convolutional layer using ReLU activation and batch normalization as a generator.

Generate image

CycleGAN model





DCGAN model