Deep Convolutional Generative Adversarial Network (DCGAN) Report

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Course: COS30082

Roles of the Generator and Discriminator

Generator (G)

- The Generator's role is to produce fake images from random noise vectors (latent vectors).

- It learns to mimic real data by generating images that look increasingly realistic.

- The goal of G is to fool the Discriminator into classifying generated images as real.

Discriminator (D)

- The Discriminator acts as a binary classifier, distinguishing real images (from the dataset) from fake ones (produced by the Generator).

- Its goal is to accurately identify which images are real and which are fake.

Adversarial Process

During training, both networks improve simultaneously through adversarial learning:

- The Generator tries to minimize the Discriminator's ability to distinguish fakes.

- The Discriminator tries to maximize its accuracy in detecting fakes.

This creates a dynamic equilibrium where the Generator produces more realistic outputs, and the Discriminator becomes better at distinguishing them, until both reach balance.

Create an artwork by manipulating the latent space to generate unique facial features:
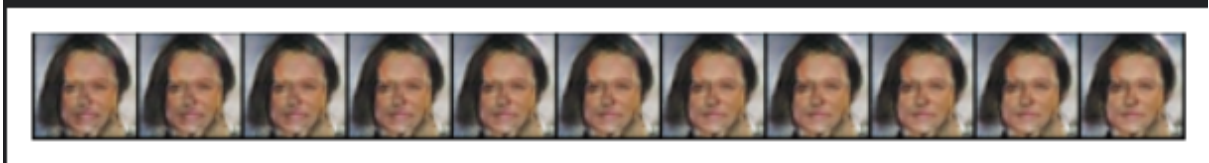
Create an artwork of any kind that fits your interests. You can use any GAN project on the internet or develop it yourself: