This landscape image was created by AI.

A new kind of neural network, called a **generative adversarial network (GAN)**, can be used create complex outputs, like photorealistic images. How do GANs do this, and can we influence what they produce? Try painting with a GAN below to collaborate and create your own custom image.

Co-create with a

neural network

This isn't your average paint-with-pixels editor. Add and remove trees, doors and other objects to create your own custom realistic image with a GAN.

1. Choose a generated image

2. Pick object type

Tree Grass Door Sky

Cloud Brick Dome

3. Draw to add or remove objects from canvas

Download Share

What's happening in this demo?

What does a GAN “understand”

While using this demo, you may have noticed that you can only add certain objects in specific places, like doors on the sides of buildings. In addition, adding a door in multiple images produces many different styles of door, each fitting the context around it.

Researchers at IBM and MIT utilized a technique called GAN Dissection to understand this behavior. As GANs learn to draw, they are able to compose objects specific to the scene they are trained on.

Adjust Trees

Painting with neurons, not pixels

New ways to work with AI

Learn more about this research

Why this research matters

This collaboration represents an important step toward explainable AI image creation. Understanding how a GAN operates provides a basis for more meaningful collaboration between people and neural networks.

Find out more about this research →

Learn more about explainable AI at IBM →

MIT-IBM Watson AI Lab

This research was conducted as part of the MIT-IBM Watson AI Lab.