

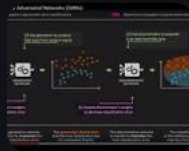
Adaptive Generative Adversarial Network

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An adaptive generative adversarial network (GAN) is a type of deep learning architecture that can adapt to changes in data or environmental conditions. Adaptive GANs are based on the basic GAN architecture, but with added mechanisms to make them more flexible.



How it works

- A GAN has two neural networks: a generator and a discriminator.
- The generator creates fake samples that look real.
- The discriminator determines if the samples are real.
- The generator tries to produce samples that are close to real so it can fool the discriminator.

Applications

- **Traffic state estimation:** Adaptive GANs can be used to estimate traffic states using sparse data.
- **Speech generation:** Adaptive GANs can be used to generate speech with different speaking styles.
- **Medical image generation:** Adaptive GANs can be used to generate realistic medical images.
- **Wind speed prediction:** Adaptive GANs can be used to predict wind speeds for wind farm operators.

Related concepts

Dynamically Adaptive Generative Adversarial Network (DGAN)

A type of adaptive GAN that can adapt to changes in data distribution, task requirements, or environmental conditions.

Adaptive Composite Gradient (ACG)

A semi-gradient-free algorithm that can reduce the computational cost of gradient and Hessian.

An adaptive GAN approach for medical image generation

The GAN consists of two neural networks: a generator that captures the data distribution and generates real-like "fake" samples and a discriminator that evaluates the samples.

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Amazon Web Services (AWS)

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Generative AI is experimental.



Wikipedia
[https://en.wikipedia.org/wiki/Generative_adversarial...](https://en.wikipedia.org/wiki/Generative_adversarial_network)

Generative adversarial network

A generative adversarial network (GAN) is a **class of machine learning frameworks** and a prominent framework for approaching generative artificial intelligence.

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