Abstract

Generative models are very popular in a field of unsupervised learning. They are tremendously successful to learn underlying data distribution of training data and generate a new data with some variations. This paper presents a detailed study of generative models and how they differ from traditional discriminative models. The paper more focus on two most popular generative models such as Variational Autoencoder (VAE) and Generative Adversarial Network (GAN). The paper includes working of these generative models, their architecture and an experiment is conducted to generate images using very popular MNIST data set. The comparison between these two models and their advantages and disadvantages are presented based on an experiment. At last, some solutions are presented to further improve these models.

References


**Index Terms**

Computer Science  
Networks

**Keywords**

Generative models, Unsupervised learning, Generative Adversarial Network, Variational Autoencoder, Machine Learning