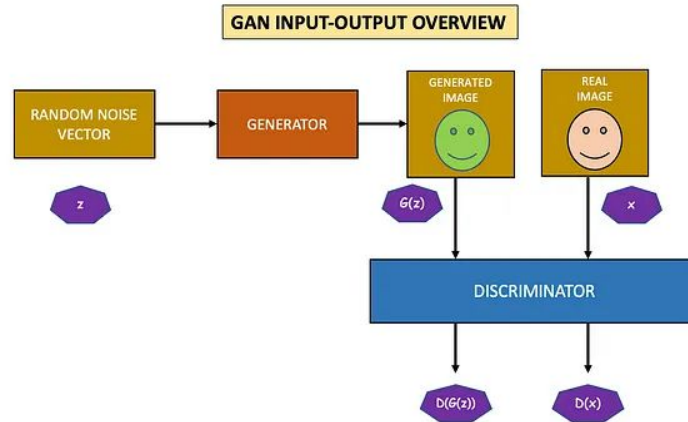


Generative Adversarial Networks

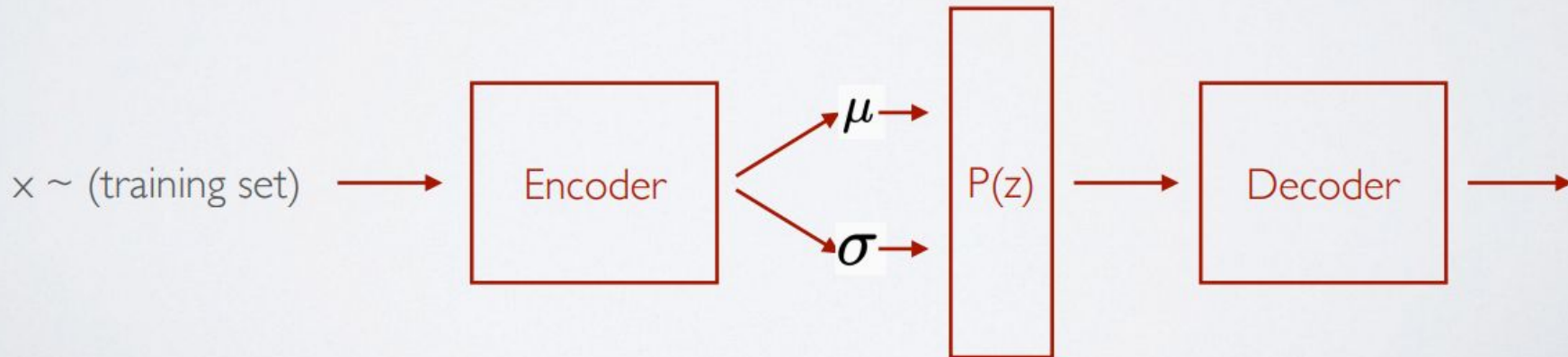


Generative Adversarial Networks

- Model's ability to learn and replicate the underlying distribution of the training data
- Generative models such as VAEs, Auto VAEs, etc.

Generative Adversarial Networks

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- Generative models such as VAEs, Auto VAEs, etc.



Generative Adversarial Networks

- Adversaries based networks, that competes among each other

Generative Adversarial Networks

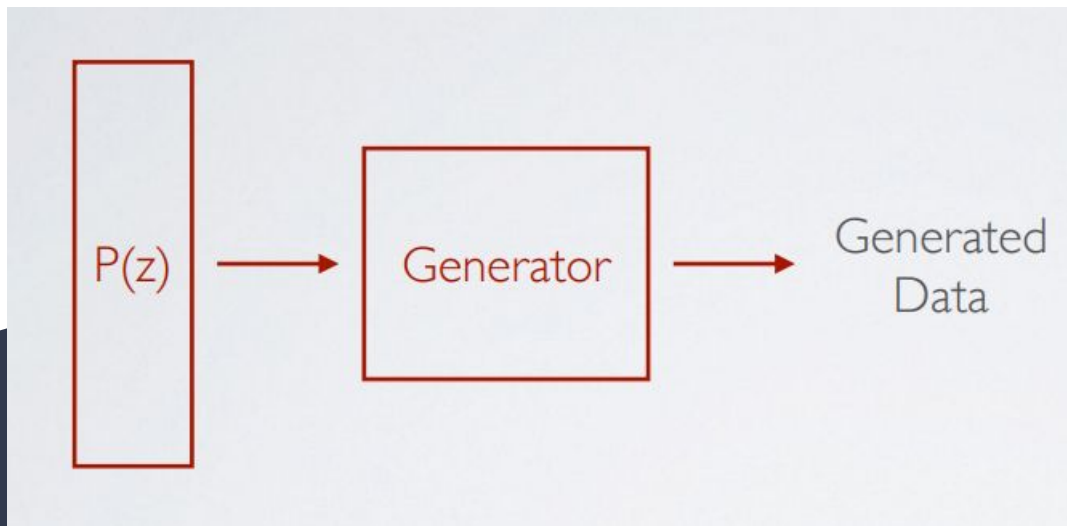
- Neural Networks

Generative Adversarial Networks

What are GANs?

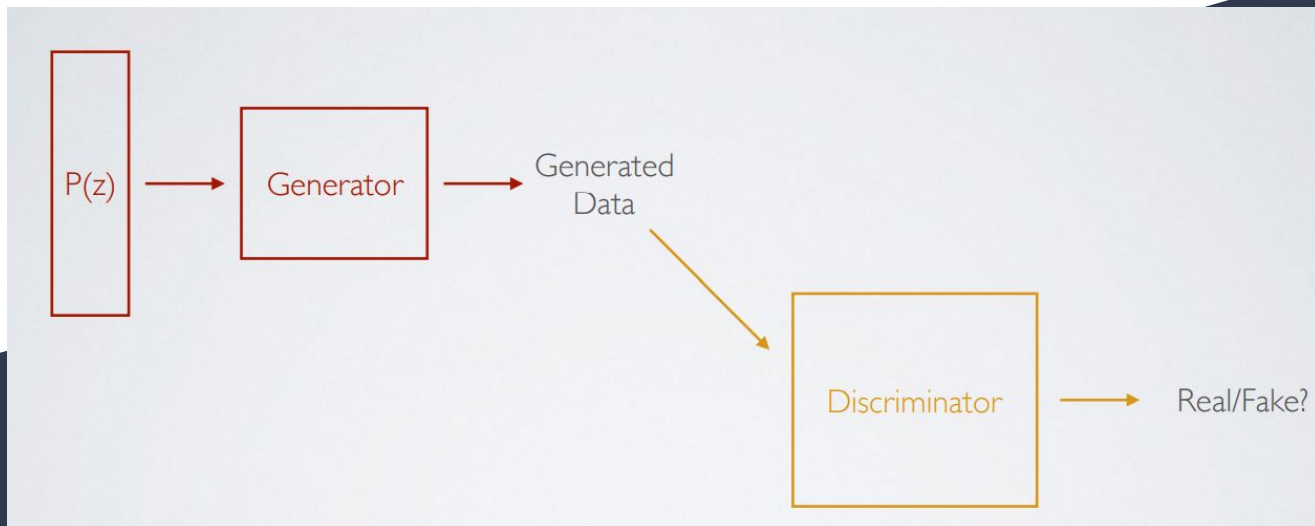
Generative Adversarial Networks

What are GANs?



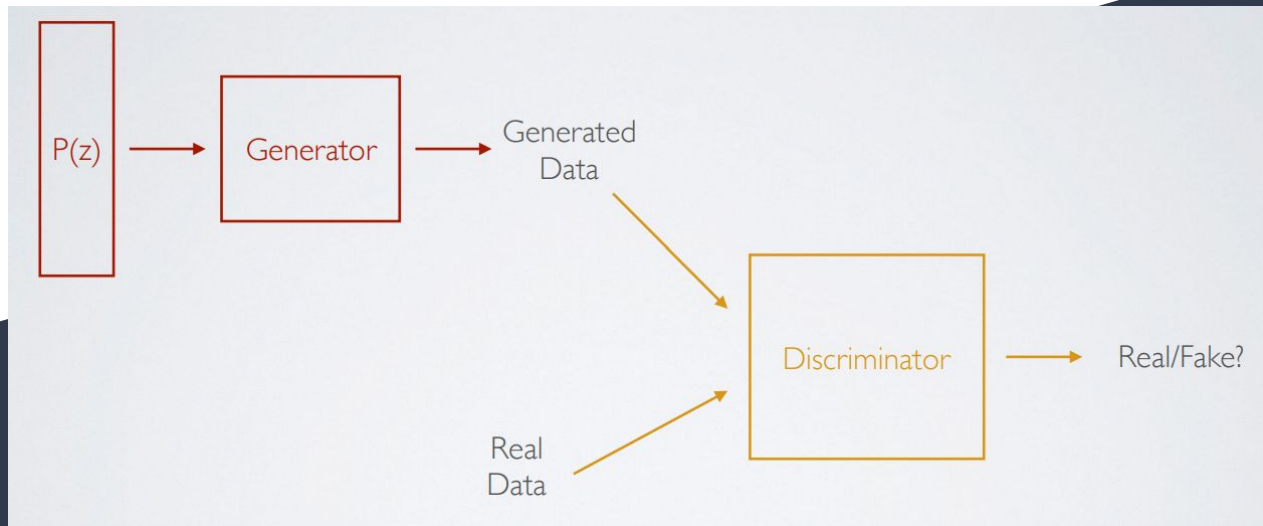
Generative Adversarial Networks

What are GANs?



Generative Adversarial Networks

What are GANs?



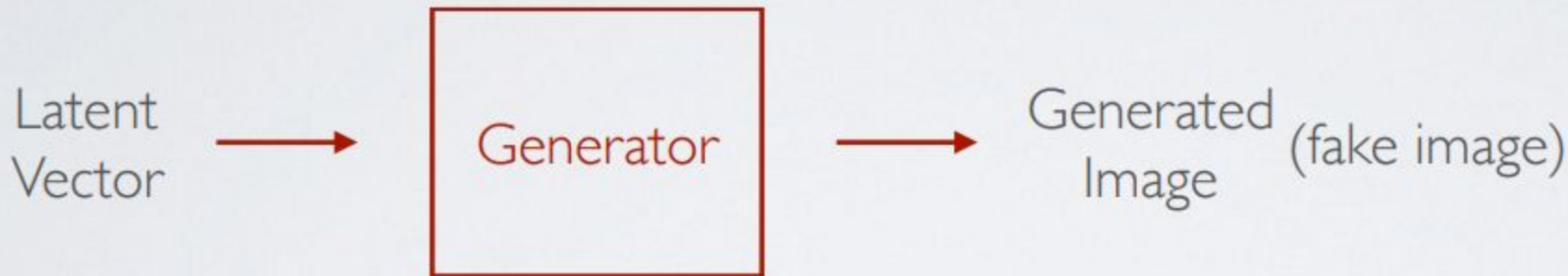
Generative Adversarial Networks

Training the GANs?

Generative Adversarial Networks

Training the GANs?

Initialization of networks (At time step $t = 0$)



Generative Adversarial Networks

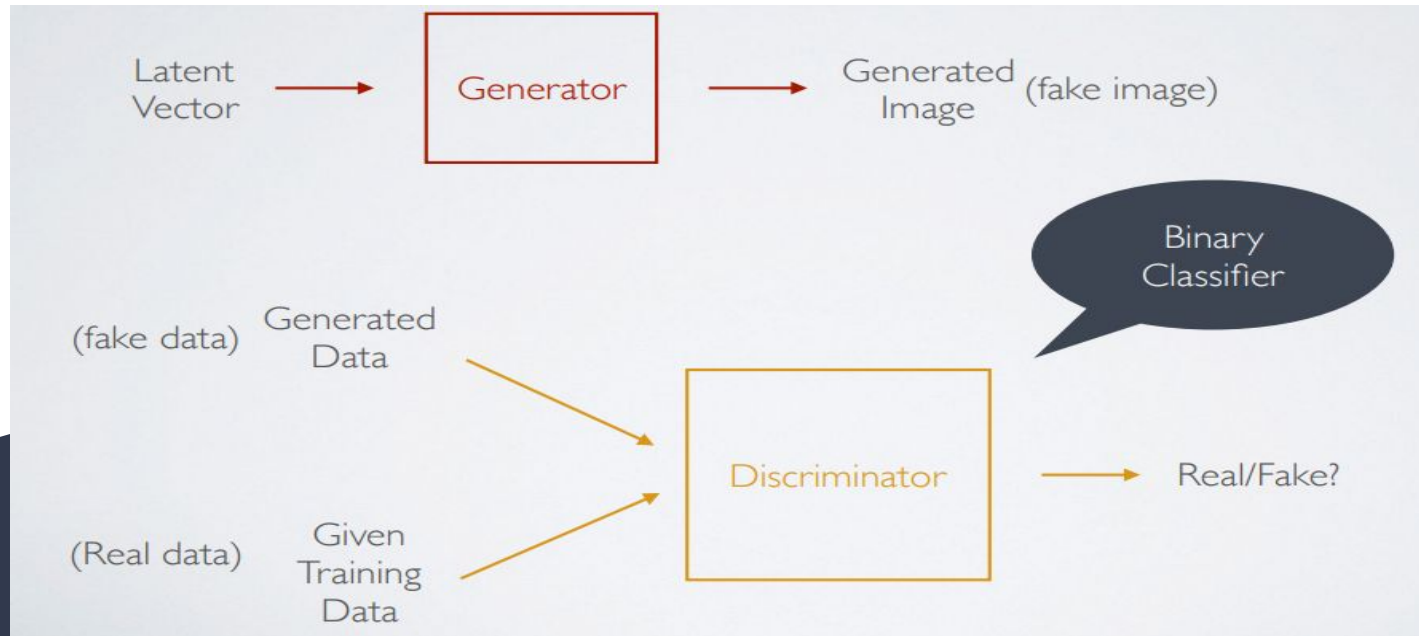
Training the GANs?

Initialization of networks (At time step $t = 0$)

Generative Adversarial Networks

Training the GANs?

Initialization of networks (At time step $t = 0$)



Generative Adversarial Networks

Generator vs Discriminator (which network should we train first)?

A dark blue, diagonal shape that starts from the bottom left and extends towards the top right, covering the lower half of the slide.

Generative Adversarial Networks

Generator vs Discriminator (which network should we train first)?

1. Discriminator
2. Generator

Generative Adversarial Networks

Generator vs Discriminator (which network should we train first)?

1. Discriminator
 - a. Use data from both fake and real classes
 - b. Train the binary classifier
2. Generator

Generative Adversarial Networks

Generator vs Discriminator (which network should we train first)?

1. Discriminator
2. Generator
 - a. Looks similar to real data
 - b. Generate images such that discriminator classifies incorrectly

Generative Adversarial Networks

A large, dark blue, diagonal shape that starts from the bottom left and extends towards the top right, covering the lower half of the slide.