

# Plan of Attack

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What we will learn in this section:

- The Idea Behind GANs
- How Do GANs Work? (3 Steps)
- Applications

# The Idea Behind GANs

# The Idea Behind GANs



Ian Goodfellow

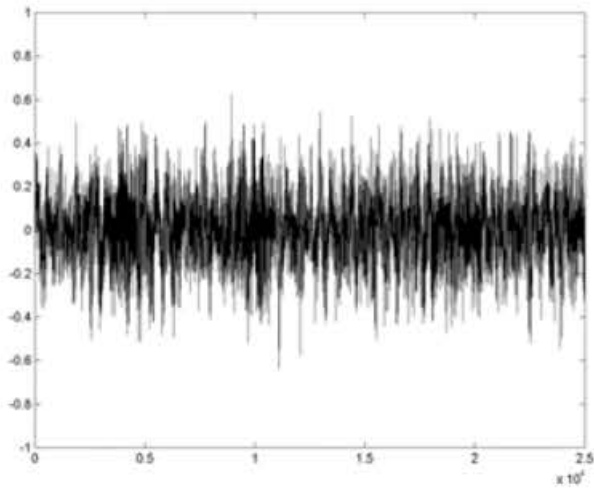
# Generative Adversarial Network



# How Do GANs Work?

# How Do GANs Work?

## Generative





# How Do GANs Work?

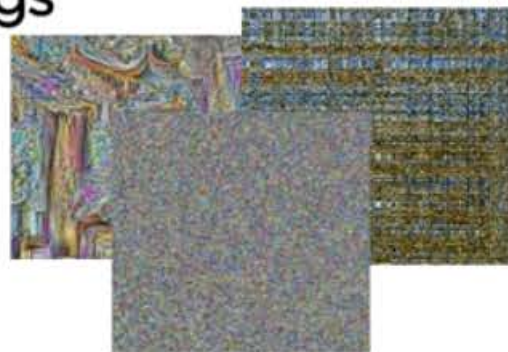
## Adversarial



Dogs



Non-Dogs





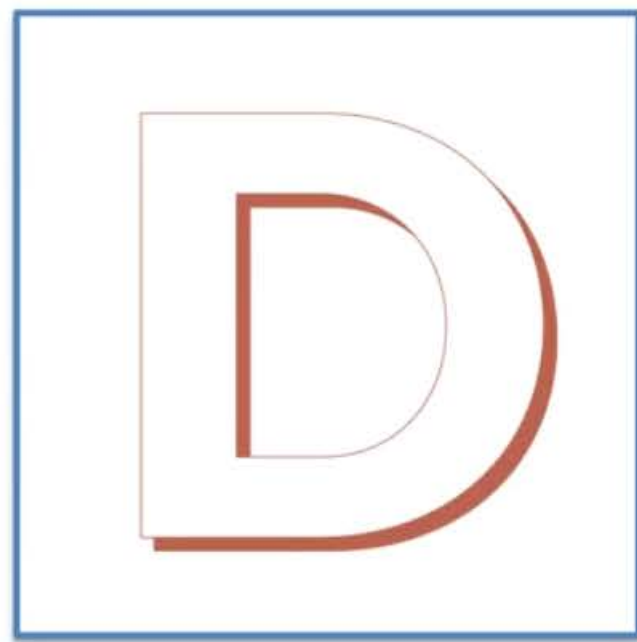
# How Do GANs Work?

## Adversarial



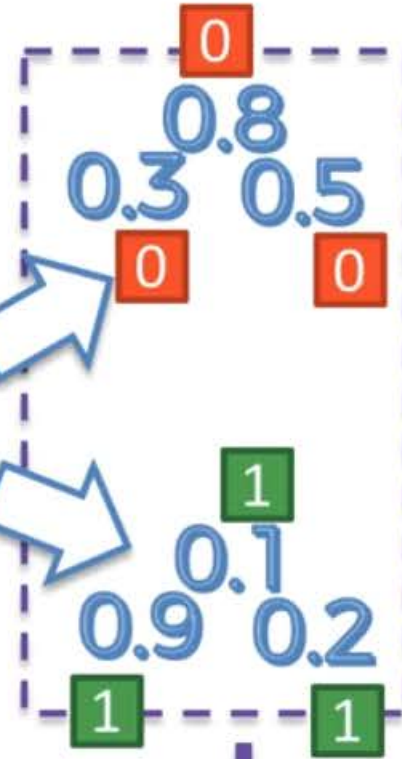
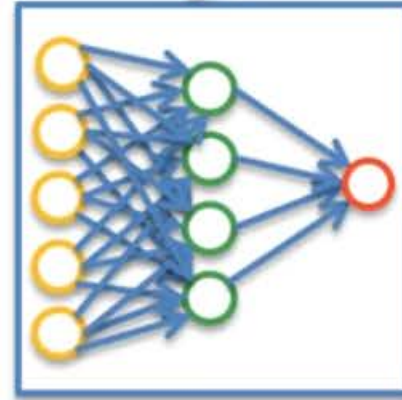
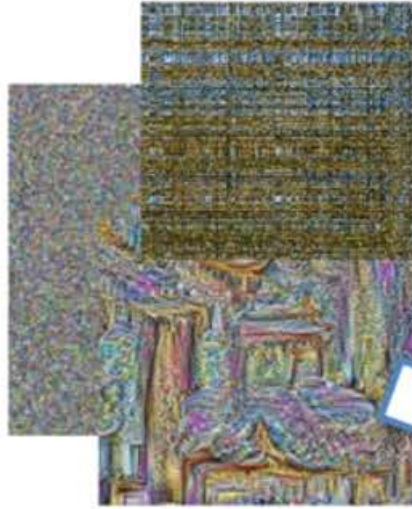
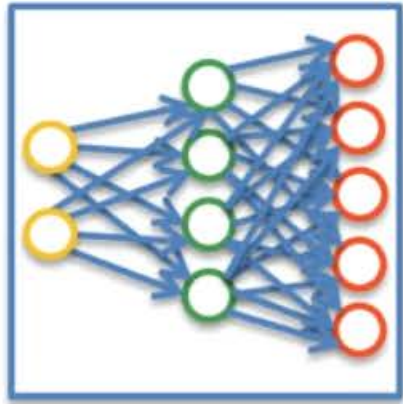
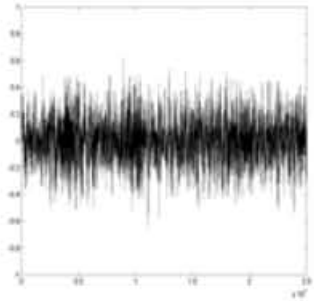
# How Do GANs Work?

## Adversarial



# How Do GANs Work?

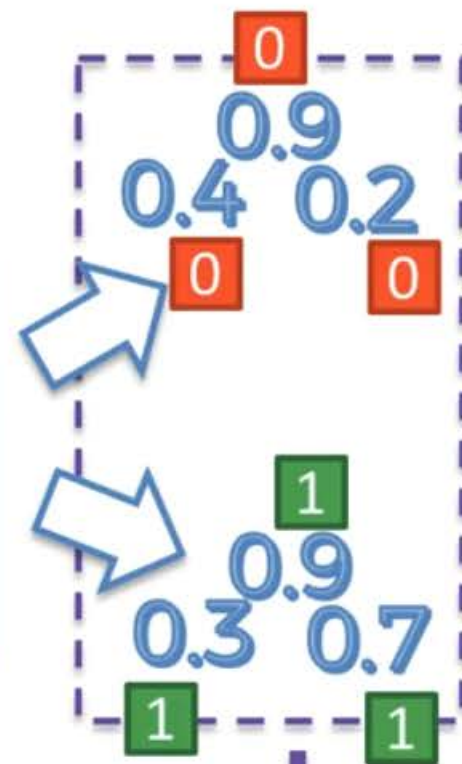
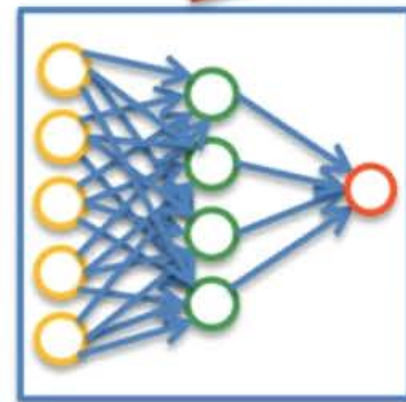
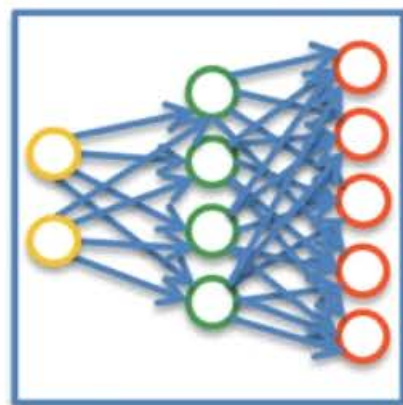
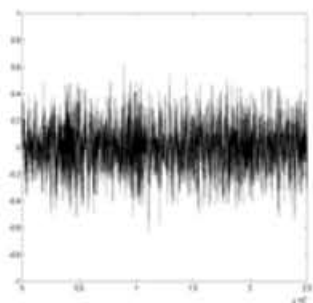
Step: 1





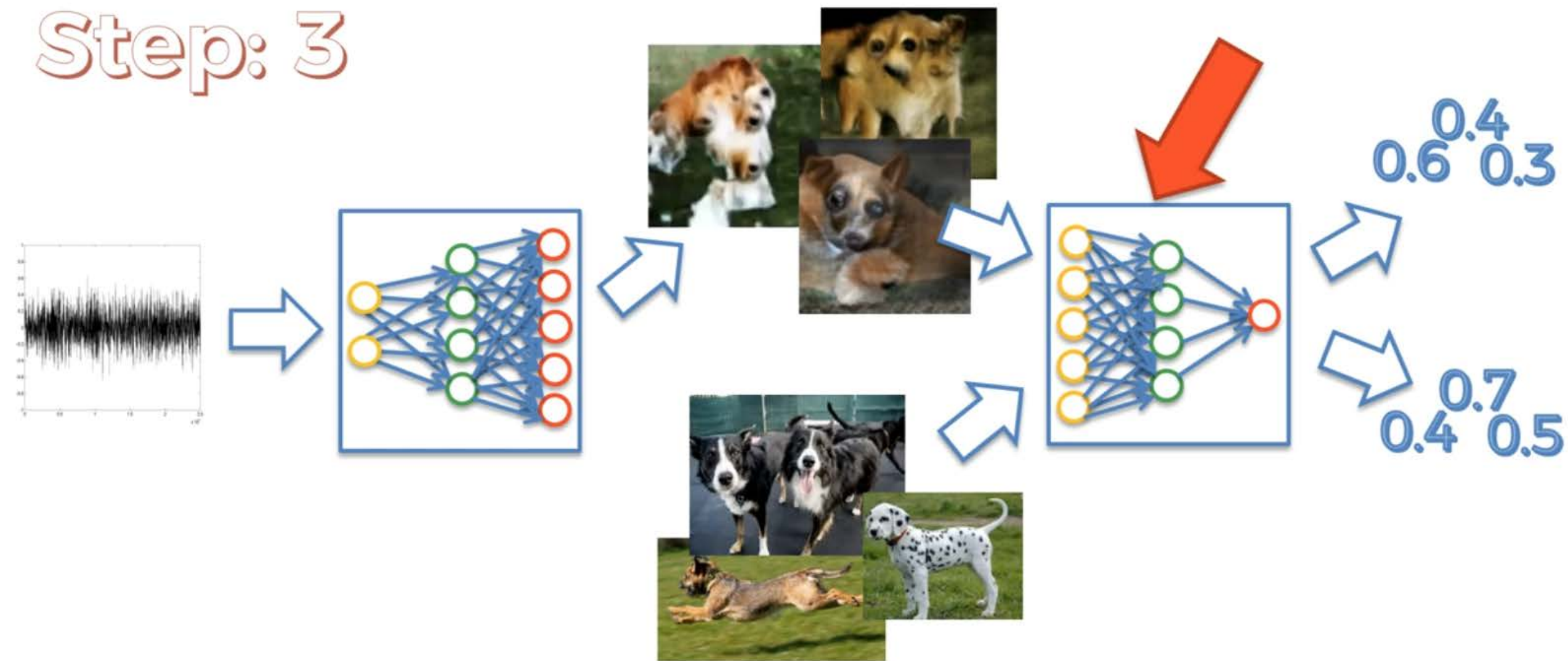
# How Do GANs Work?

Step: 2



# How Do GANs Work?

Step: 3



# Applications

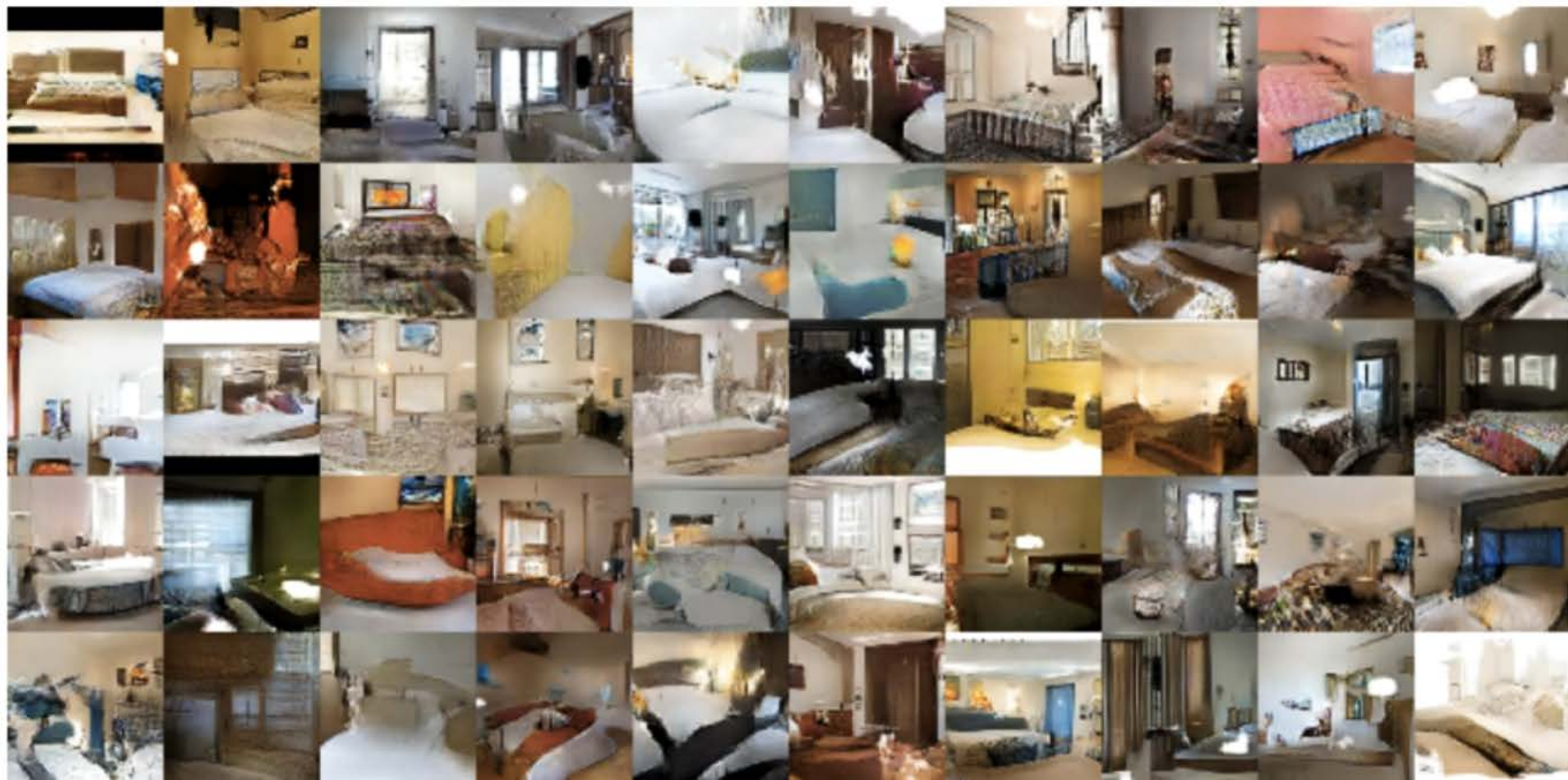
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**GANs can be used for:**

- Generating Images
- Image Modification
- Super Resolution
- Assisting Artists
- Photo-Realistic Images
- Speech Generation
- Face Ageing

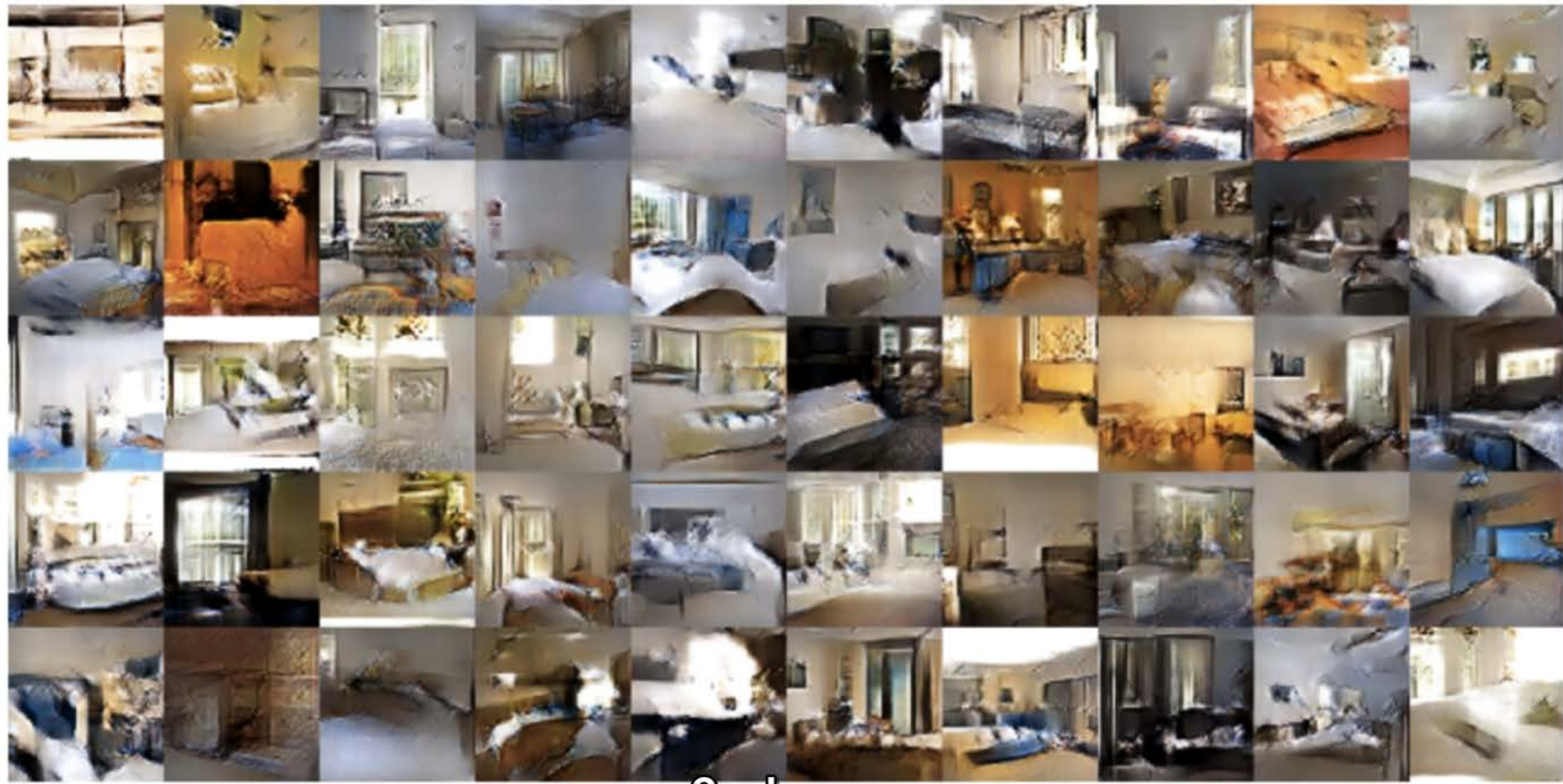


# Applications



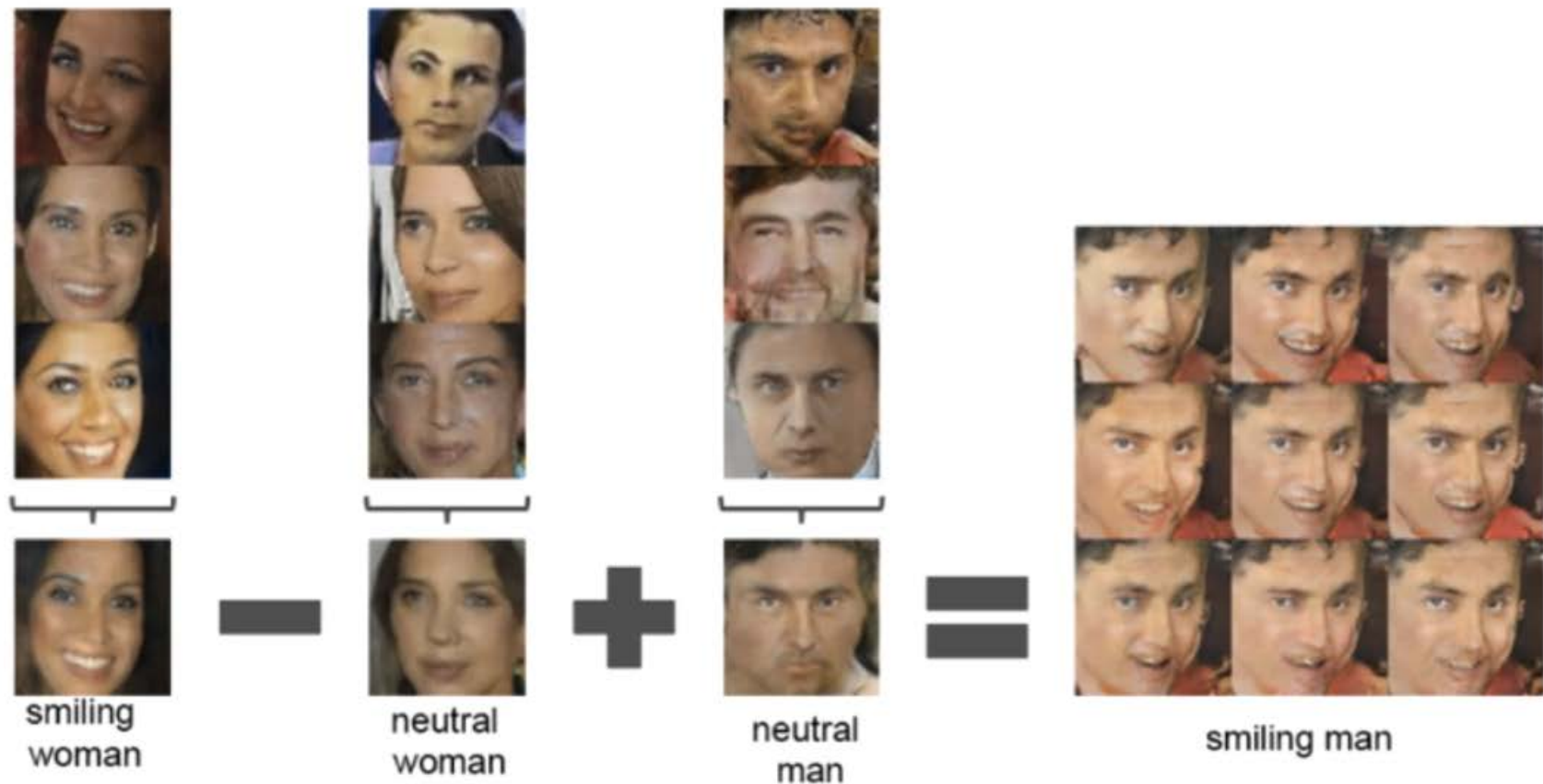


# Applications



# Image Modification

# Applications



# Applications

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Super Resolution

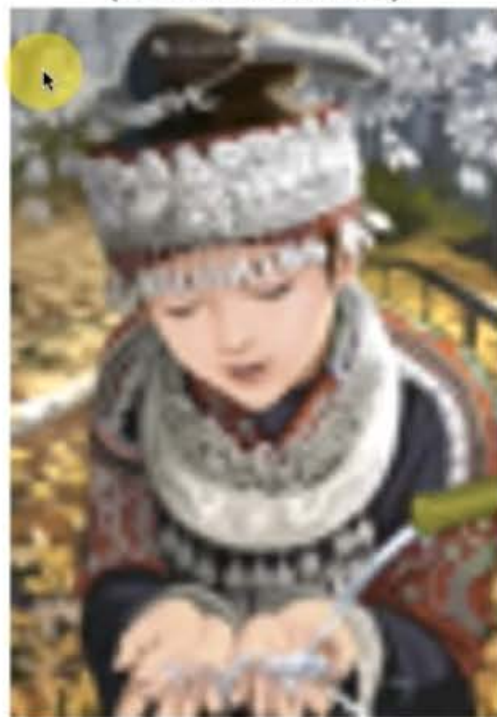


# Applications

original



bicubic  
(21.59dB/0.6423)



SRResNet  
(23.44dB/0.7777)



SRGAN  
(20.34dB/0.6562)



# Photo-Realistic Images

# Applications

INPUT



OUTPUT





