

Part 5/6: Improvement Techniques

## Other Improvements



### ProGAN

2017

Progressive growing of resolution for high-quality image generation

Resolution Scaling



### SAGAN

2018

Self-attention mechanisms for long-range dependencies

Attention



### CycleGAN

2017

Unpaired image-to-image translation with cycle consistency

Unpaired Translation



### StyleGAN

2018

Style-based generator architecture with unprecedented control

Style Control



### BigGAN

2018

Large-scale training with architectural tricks and optimization

Scale



### GauGAN

2019

NVIDIA's semantic image synthesis from layout sketches

Semantic Control



### Continuous Evolution



### Alternative Approach

Each variant addresses specific limitations and pushes boundaries in different directions: resolution, quality, control, and applicability

Diffusion models emerged as a powerful alternative, offering stable training and high-quality generation