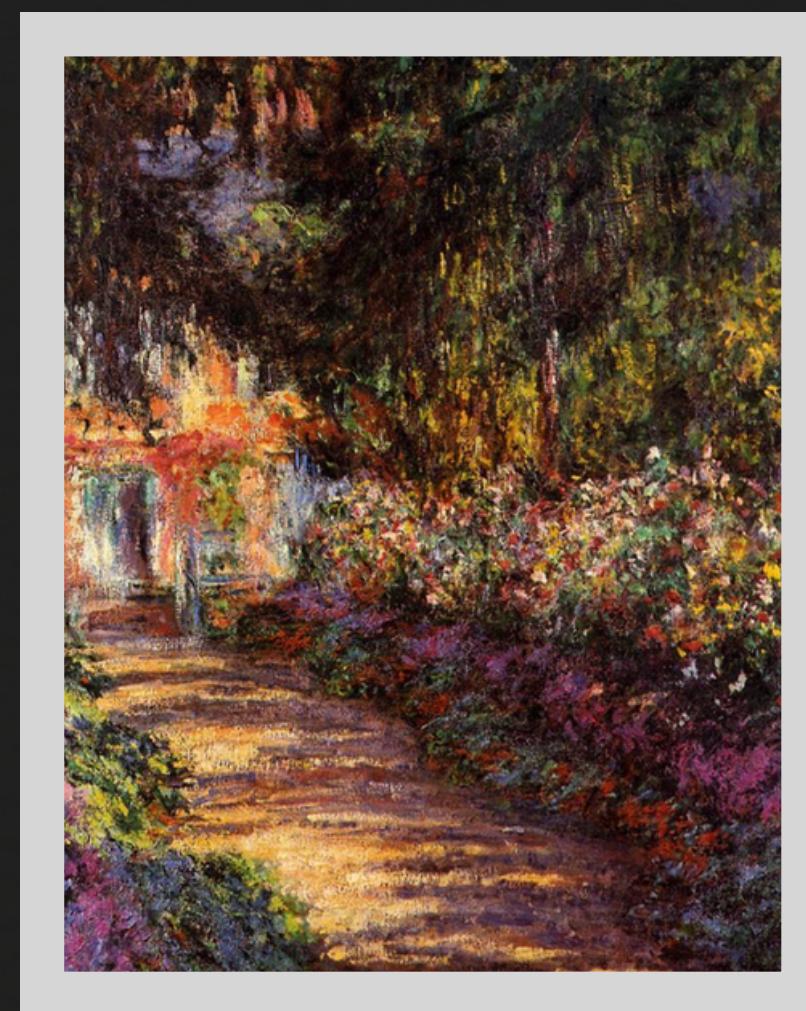


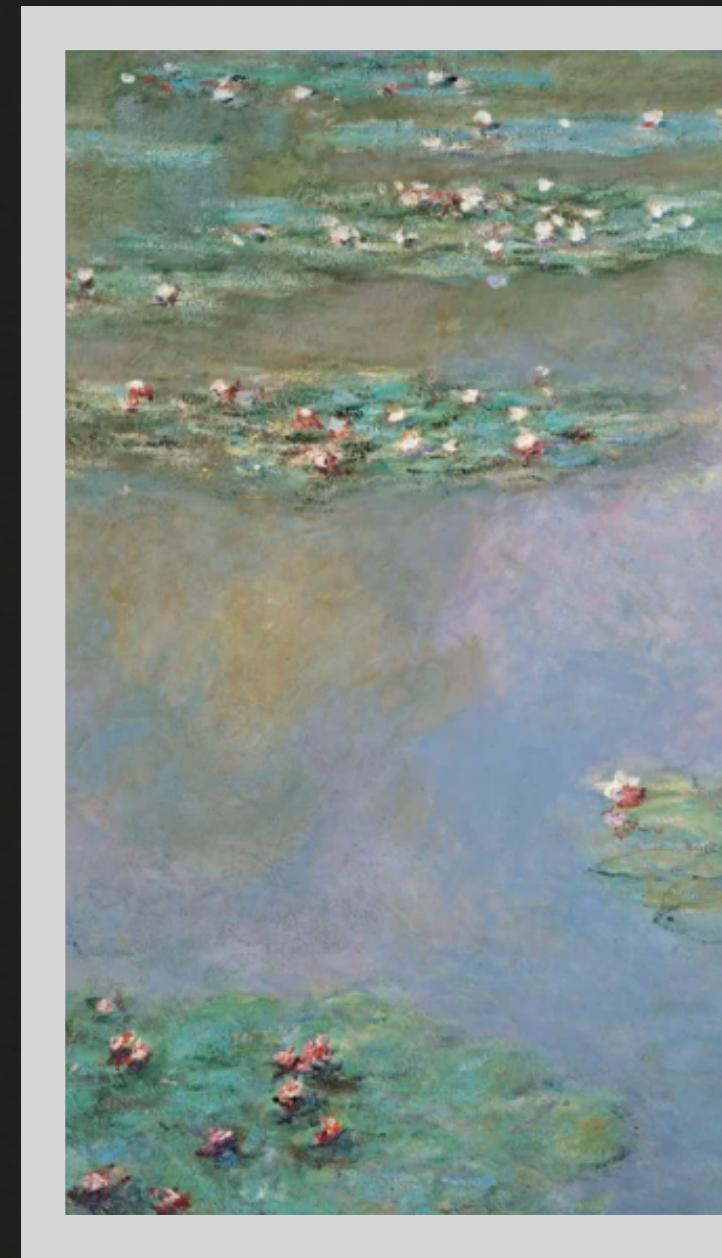


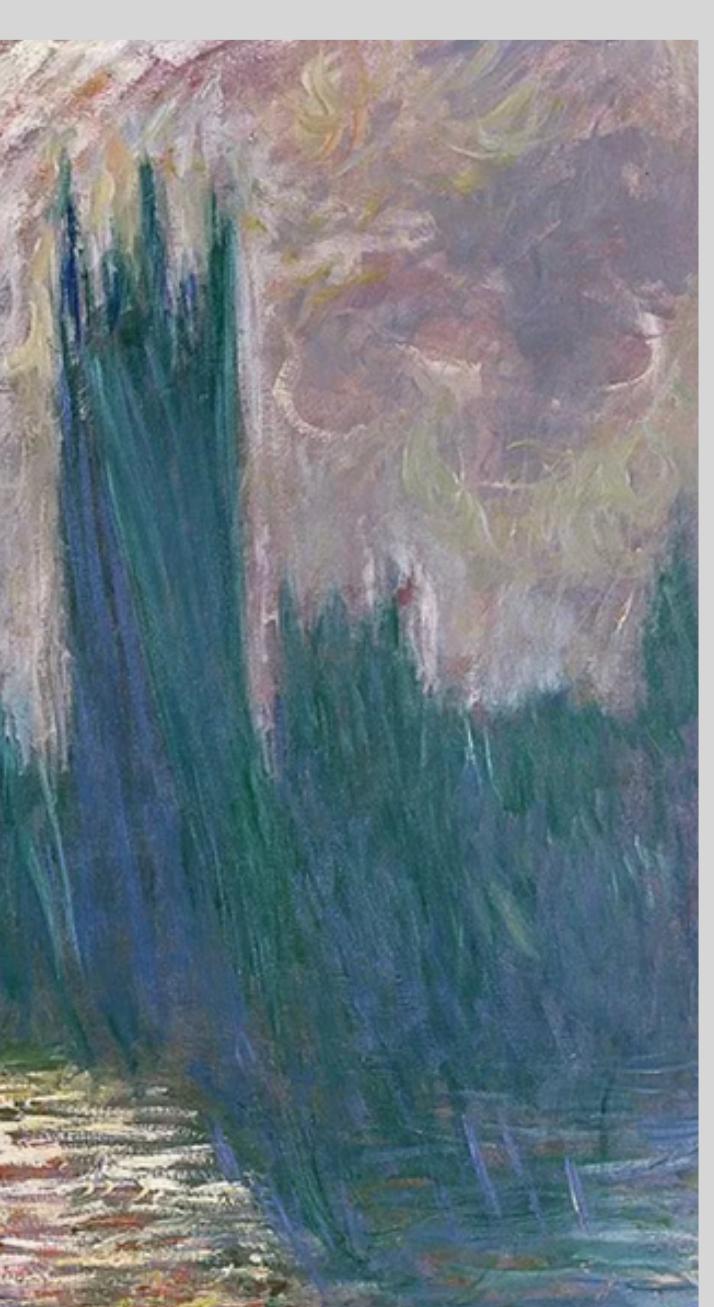
# ARTISTRY MIMICKING

Authors:  
Akshara Reddy Patlannagari,  
Ruchirkanth Gandikota,  
Shubham Mathur



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# Problem statement

This project seeks to explore the boundary between art and artificial intelligence, evaluating the capability of GANs to emulate the nuanced brushstrokes and color palettes characteristic of Monet's work.

Through the interplay of a generator and discriminator, we aim to produce 7,000 to 10,000 Monet-style images, which demonstrate the potential for data science to mimic the creativity of renowned artists.



# Current state of art



Our project aligns with and expands upon the existing body of work in neural style transfer (NST) and generative adversarial networks (GANs).

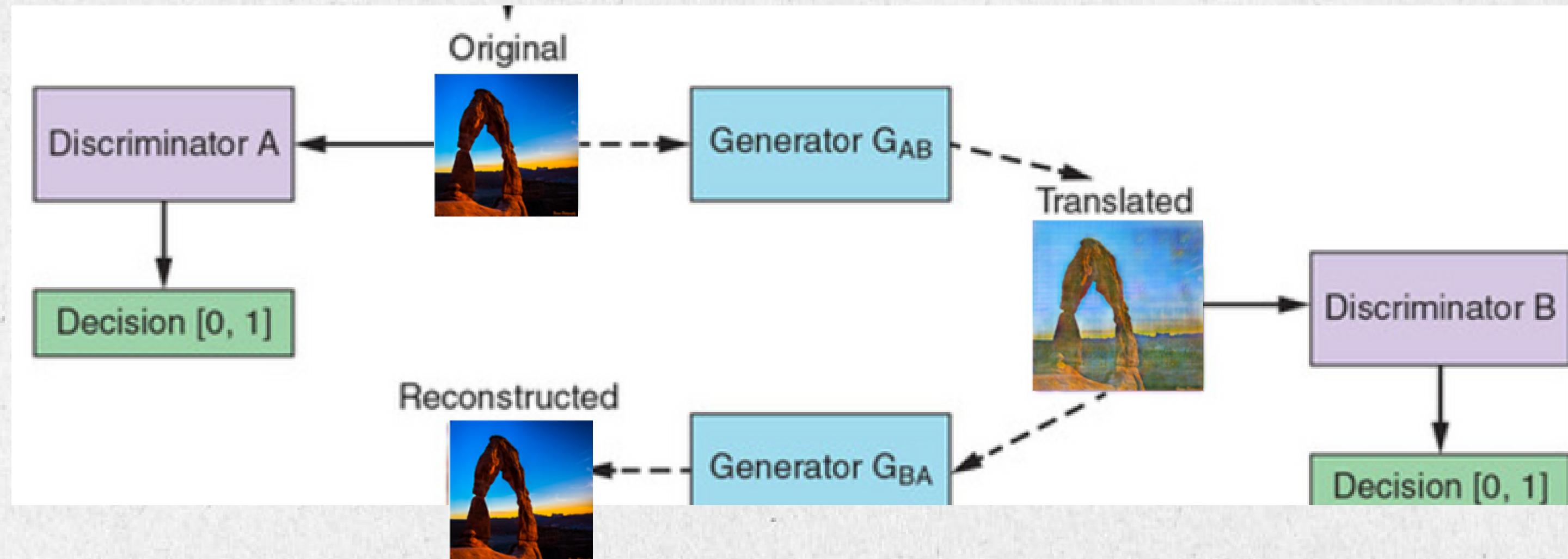


CNNs, GANs, Cycle GANs, AttentionGAN, Single Image GANs are some of the approaches being used for NST.



We chose CycleGANs due to their advancements in image style transfer. They build on CNNs and Pix2Pix, offering superior resolution and quality in transforming images coherently.

# Approach (Cycle GANs)



# Dataset

- **monet\_jpg** - 300 Monet paintings sized 256x256 in JPEG format
- **monet\_tfrec** - 300 Monet paintings sized 256x256 in TFRecord format
- **photo\_jpg** - 7028 photos sized 256x256 in JPEG format
- **photo\_tfrec** - 7028 photos sized 256x256 in TFRecord format

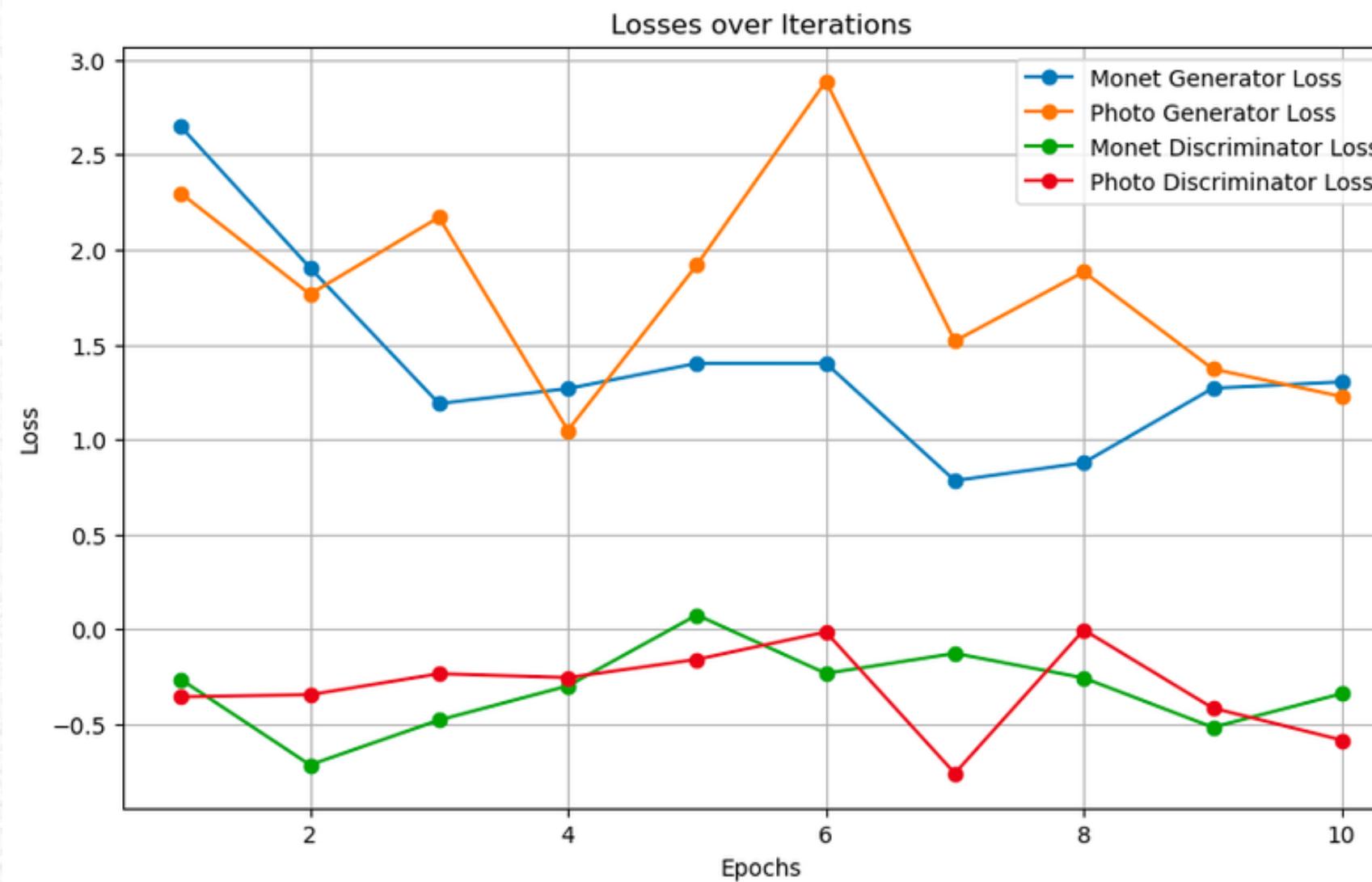


photo\_jpg files



monet\_jpg files

# Results





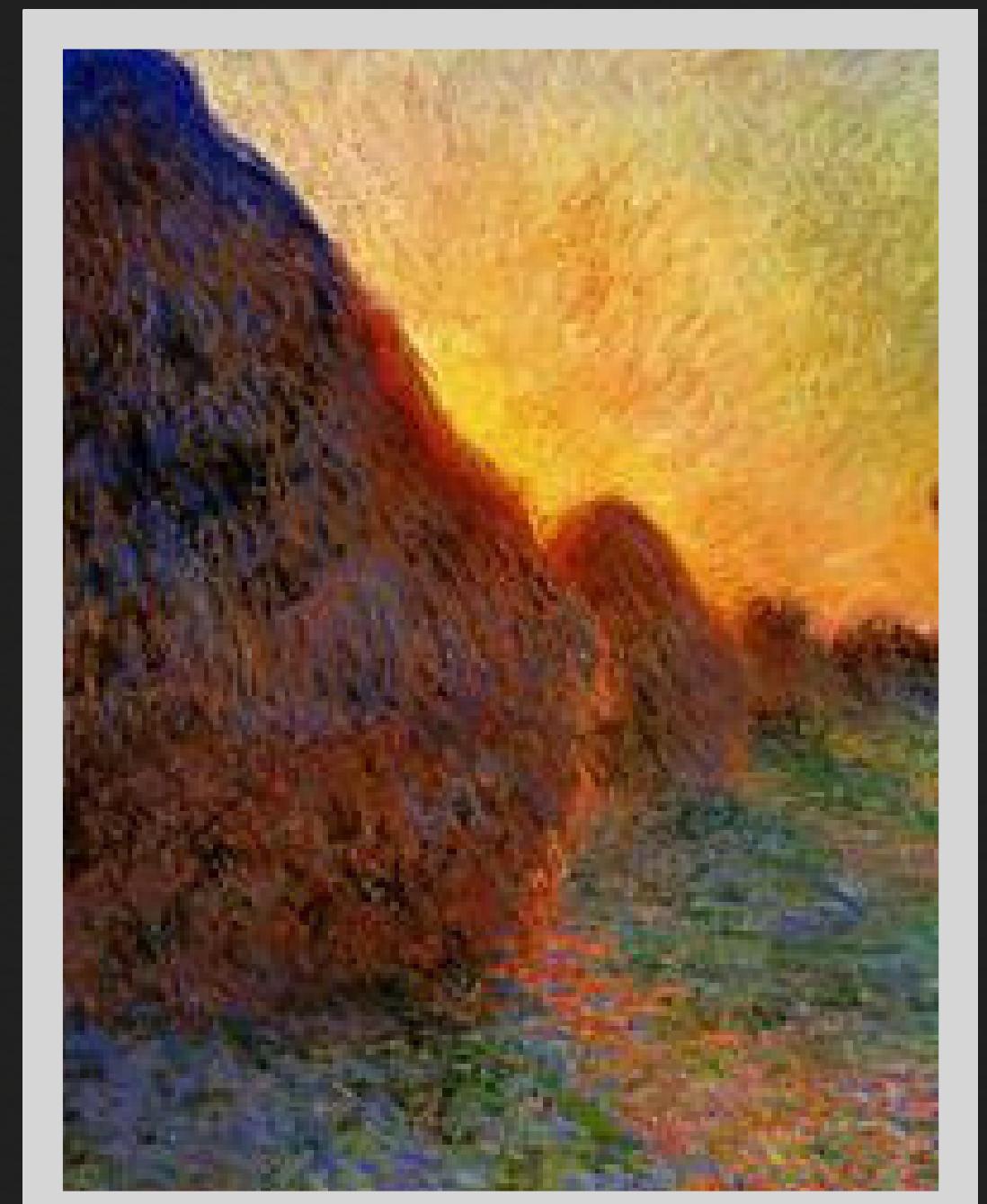
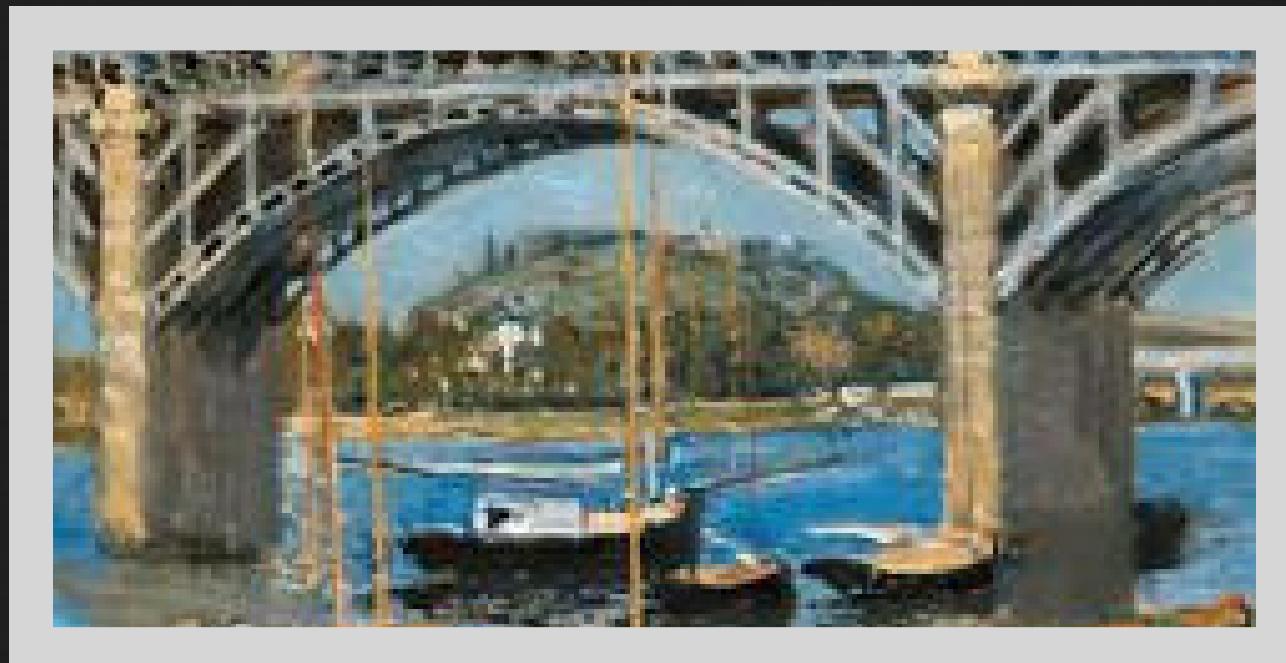
# Performance measures

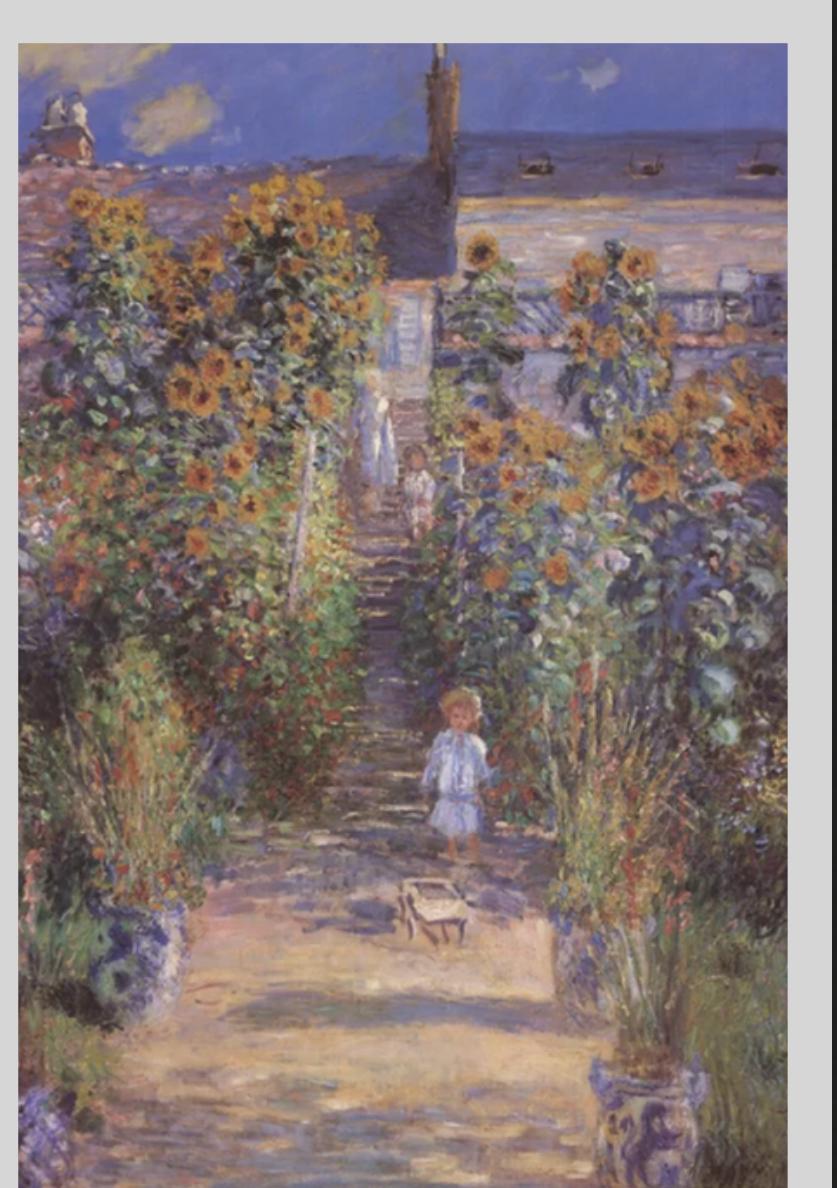
FID (Fréchet Inception Distance):

It measures the quality of images generated by GANs, comparing real and generated images' feature distributions using the Inception network. It calculates the Fréchet distance between these distributions to assess similarity, crucial for evaluating GAN performance. We achieved an FID of **8.3552** for monet paintings and an FID of **20.4353** for photos.

# Conclusion

We successfully created 5 images in the style of Monet using CycleGANs. To enhance this project, we can generate Monet-style paintings directly from text inputs, rather than from images.





# Thank You!

