

```
In [1]: #!pip install tensorflow
#!python -m pip install scikit-learn
!pip install git+https://github.com/tensorflow/examples.git

Collecting git+https://github.com/tensorflow/examples.git
  Cloning https://github.com/tensorflow/examples.git to /tmp/pip-req-build-ui6o7ktx
    Running command git clone --filter=blob:none --quiet https://github.com/tensorflow/examples.git /tmp/pip-re
q-build-ui6o7ktx
      Resolved https://github.com/tensorflow/examples.git to commit fff4bcda7201645a1efaea4534403daf5fc03d42
      Preparing metadata (setup.py) ... done
Requirement already satisfied: absl-py in /opt/conda/lib/python3.10/site-packages (from tensorflow-examples==0.1703207612.14612504798313709296143628255168868146460245314) (1.4.0)
Requirement already satisfied: six in /opt/conda/lib/python3.10/site-packages (from tensorflow-examples==0.1703207612.14612504798313709296143628255168868146460245314) (1.16.0)
Building wheels for collected packages: tensorflow-examples
  Building wheel for tensorflow-examples (setup.py) ... done
  Created wheel for tensorflow-examples: filename=tensorflow_examples-0.1703207612.14612504798313709296143628255168868146460245314-py3-none-any.whl size=301582 sha256=3cc93379809e96756153ff728c6cf71f0157f1f09e7a2b62f404c733bce90bf6
  Stored in directory: /tmp/pip-ephem-wheel-cache-tl9a6t2v/wheels/72/5f/d0/7fe769eaa229bf20101d11a357eb23c83c481bee2d7f710599
Successfully built tensorflow-examples
Installing collected packages: tensorflow-examples
Successfully installed tensorflow-examples-0.1703207612.14612504798313709296143628255168868146460245314
```

```
In [2]: #import tensorflow_datasets as tfds
from tensorflow_examples.models.pix2pix import pix2pix
import tensorflow as tf
import os
import time
import matplotlib.pyplot as plt
from IPython.display import clear_output
import os
import tensorflow as tf
from sklearn.model_selection import train_test_split
from tqdm import tqdm

AUTOTUNE = tf.data.AUTOTUNE
```

```
2024-05-06 14:19:05.517410: E external/local_xla/xla/stream_executor/cuda/cuda_dnn.cc:9261] Unable to register cuDNN factory: Attempting to register factory for plugin cuDNN when one has already been registered
2024-05-06 14:19:05.517529: E external/local_xla/xla/stream_executor/cuda/cuda_fft.cc:607] Unable to register cuFFT factory: Attempting to register factory for plugin cuFFT when one has already been registered
2024-05-06 14:19:05.630672: E external/local_xla/xla/stream_executor/cuda/cuda_blas.cc:1515] Unable to register cuBLAS factory: Attempting to register factory for plugin cuBLAS when one has already been registered
```

In [4]:

```
def load_images_as_tensors(file_paths):
    images = []
    for file_path in file_paths:
        image = tf.io.read_file(file_path)
        image = tf.image.decode_image(image, channels=3) # Decode image with 3 channels (RGB)
        image = tf.image.resize(image, [256, 256]) # Resize if needed
        #image = tf.cast(image, tf.float32) / 255.0 # Normalize pixel values to [0, 1]
        images.append(image)
    return tf.convert_to_tensor(images)

photo_directory = '/kaggle/input/data-cycle-gan/data/data/photo_jpg'
monet_directory = '/kaggle/input/data-cycle-gan/data/data/monet_jpg'
#photo_directory = 'data/photo_jpg'
#monet_directory = 'data/monet_jpg'

# Get the list of image paths
image_paths = [os.path.join(photo_directory, filename) for filename in os.listdir(photo_directory) if filename.endswith('.jpg')]
monet_paths = [os.path.join(monet_directory, filename) for filename in os.listdir(monet_directory) if filename.endswith('.jpg')]

# Split the image paths into training and testing sets
X_train_img, X_test_img = train_test_split(image_paths, test_size=0.2, random_state=42)
X_train_monet, X_test_monet = train_test_split(monet_paths, test_size=0.2, random_state=42)

# Load training and testing images as TensorFlow tensors
train_images = load_images_as_tensors(X_train_img)
test_images = load_images_as_tensors(X_test_img)

# Load training and testing images as TensorFlow tensors
train_monet = load_images_as_tensors(X_train_monet)
test_monet = load_images_as_tensors(X_test_monet)

print("Shape of X_train_A:", train_images.shape)
print("Shape of X_test_A:", test_images.shape)

print("Shape of X_train_B:", train_monet.shape)
print("Shape of X_test_B:", test_monet.shape)
```

```
Shape of X_train_A: (5630, 256, 256, 3)
Shape of X_test_A: (1408, 256, 256, 3)
Shape of X_train_B: (240, 256, 256, 3)
Shape of X_test_B: (60, 256, 256, 3)
```

```
In [5]: BUFFER_SIZE = 1000
'''the buffer size typically refers
to the number of elements (images in this case)
that are buffered or preloaded into memory during data preprocessing or
input pipeline operations.'''
BATCH_SIZE = 1
IMG_WIDTH = 256
IMG_HEIGHT = 256
```

```
In [6]: def random_crop(image):
    cropped_image = tf.image.random_crop(
        image, size=[IMG_HEIGHT, IMG_WIDTH, 3])

    return cropped_image

def normalize(image):
    '''normalizing the images to [-1, 1]'''
    image = tf.cast(image, tf.float32)
    image = (image / 127.5) - 1
    return image

def random_jitter(image):
    # resizing to 286 x 286 x 3
    image = tf.image.resize(image, [286, 286],
                           method=tf.image.ResizeMethod.NEAREST_NEIGHBOR)
    # randomly cropping to 256 x 256 x 3
    image = random_crop(image)
    # random mirroring
    image = tf.image.random_flip_left_right(image)
    return image

# EXTRA AUGMENTATION FUNCTIONS
def flip_vertically(image):
    image = tf.image.flip_left_right(image)
    return image

def brightness(image, brightness):
    image = tf.image.adjust_brightness(image, brightness)
    return image
```

```
def saturation(image, saturation):
    image = tf.image.adjust_saturation(image, saturation)
    return image

# apply transformations here
def preprocess_image_train(image):
    image = random_jitter(image) # transformation 1
    image = normalize(image) # normalization
    return image

def preprocess_image_train_augmented(image):
    # this function does not apply any extra transformations, because they are already apply in the jittered/f
    image = normalize(image) # normalization
    return image

def preprocess_image_test(image):
    image = normalize(image) # normalization
    return image
```

In [7]:

```
train_monet_dataset = tf.data.Dataset.from_tensor_slices(train_monet)
train_images_dataset = tf.data.Dataset.from_tensor_slices(train_images)
test_monet_dataset = tf.data.Dataset.from_tensor_slices(test_monet)
test_images_dataset = tf.data.Dataset.from_tensor_slices(test_images)
```

In [8]:

```
# Function to generate additional augmented images for monet dataset
def jittered_extra_monet_images(dataset, num_extra_images):
    extra_images = []
    for image in dataset:
        for _ in range(num_extra_images):
            image = random_jitter(image)
            extra_images.append(image)
    return extra_images

def flipped_extra_monet_images(dataset, num_extra_images):
    extra_images = []
    for image in dataset:
        for _ in range(num_extra_images):
            image = flip_vertically(image)
            extra_images.append(image)
    return extra_images

def cropped_extra_monet_images(dataset, num_extra_images):
    extra_images = []
    for image in dataset:
```

```
for _ in range(num_extra_images):
    image = random_crop(image)
    extra_images.append(image)
return extra_images

def saturated_extra_monet_images(dataset, num_extra_images):
    extra_images = []
    for image in dataset:
        for _ in range(num_extra_images):
            image = saturation(image, 0.3)
            extra_images.append(image)
    return extra_images

def brightness_extra_monet_images(dataset, num_extra_images):
    extra_images = []
    for image in dataset:
        for _ in range(num_extra_images):
            image = brightness(image, 4)
            extra_images.append(image)
    return extra_images

# Define the number of extra images to generate for the monet dataset
NUM_EXTRA_MONET_IMAGES = 1

# Generate extra augmented images for the monet dataset
train_monet_subset_1 = train_monet_dataset.take(50)
train_monet_subset_2 = train_monet_dataset.take(50)
train_monet_subset_3 = train_monet_dataset.take(50)
train_monet_subset_4 = train_monet_dataset.take(25)
train_monet_subset_5 = train_monet_dataset.take(25)

extra_monet_images_1 = jittered_extra_monet_images(train_monet_subset_1, NUM_EXTRA_MONET_IMAGES)
extra_monet_images_2 = flipped_extra_monet_images(train_monet_subset_2, NUM_EXTRA_MONET_IMAGES)
extra_monet_images_3 = cropped_extra_monet_images(train_monet_subset_3, NUM_EXTRA_MONET_IMAGES)
extra_monet_images_4 = saturated_extra_monet_images(train_monet_subset_4, NUM_EXTRA_MONET_IMAGES)
extra_monet_images_5 = brightness_extra_monet_images(train_monet_subset_5, NUM_EXTRA_MONET_IMAGES)

extra_monet_images = []
extra_monet_images.extend(extra_monet_images_1)
extra_monet_images.extend(extra_monet_images_2)
extra_monet_images.extend(extra_monet_images_3)
extra_monet_images.extend(extra_monet_images_4)
extra_monet_images.extend(extra_monet_images_5)
```

```
In [9]: len(extra_monet_images)
```

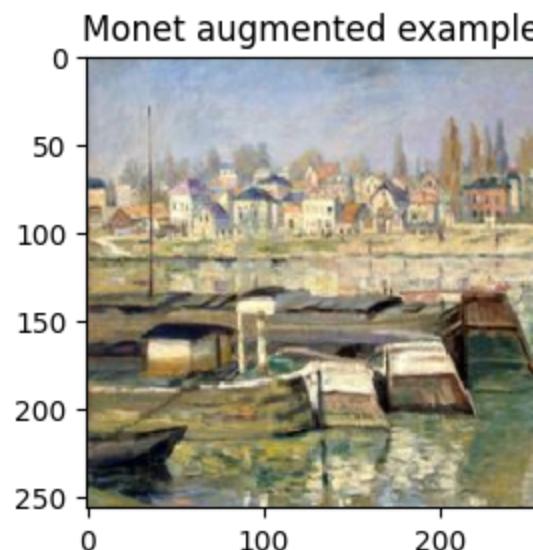
```
Out[9]: 200
```

```
In [10]: # Concatenate the extra augmented images with the original monet dataset
```

```
train_monet_augmented = train_monet_dataset.concatenate(tf.data.Dataset.from_tensor_slices(extra_monet_images))
```

```
In [11]: # Visualizing one of the augmented dataset images
```

```
visualz = train_monet_augmented.cache().map( # AUGMENTED DATASET  
    preprocess_image_train_augmented, num_parallel_calls=AUTOTUNE).shuffle( # SPECIFIC PREPROCESSING FUNCTION  
    BUFFER_SIZE).batch(BATCH_SIZE)  
  
sample_monet = next(iter(visualz))  
  
plt.subplot(121)  
plt.title('Monet augmented example')  
plt.imshow(sample_monet[0] * 0.5 + 0.5);
```



```
In [12]: train_monet = train_monet_augmented.cache().map( # AUGMENTED DATASET
```

```
    preprocess_image_train_augmented, num_parallel_calls=AUTOTUNE).shuffle( # SPECIFIC PREPROCESSING FUNCTION  
    BUFFER_SIZE).batch(BATCH_SIZE)
```

```
train_images = train_images_dataset.cache().map(  
    preprocess_image_train, num_parallel_calls=AUTOTUNE).shuffle(
```

```
BUFFER_SIZE).batch(BATCH_SIZE)

test_monet = test_monet_dataset.map(
    preprocess_image_test, num_parallel_calls=AUTOTUNE).cache().shuffle(
    BUFFER_SIZE).batch(BATCH_SIZE)

test_images = test_images_dataset.map(
    preprocess_image_test, num_parallel_calls=AUTOTUNE).cache().shuffle(
    BUFFER_SIZE).batch(BATCH_SIZE)
```

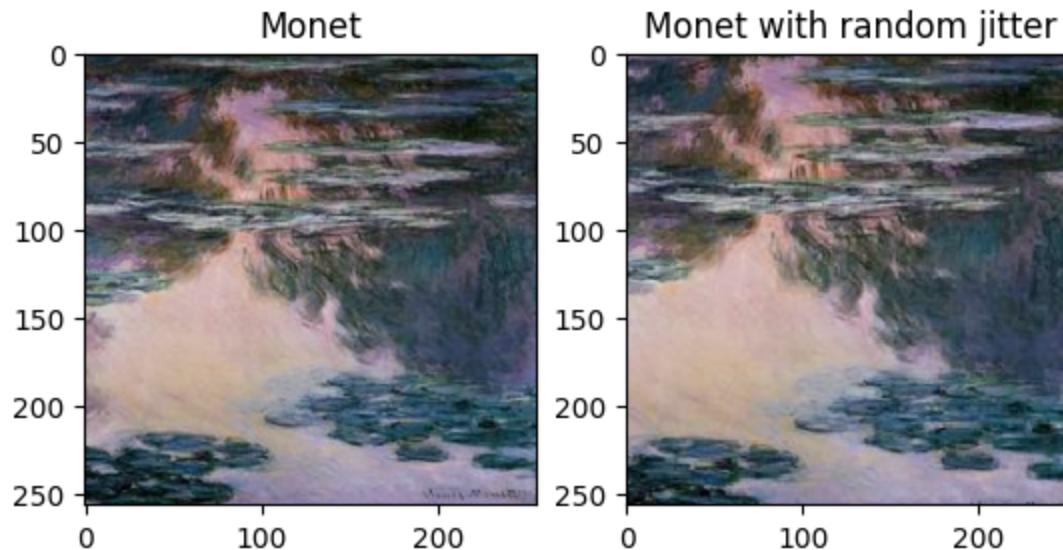
In [13]: `len(train_monet)`

Out[13]: 440

In [14]: `sample_monet = next(iter(train_monet))`  
`sample_image = next(iter(train_images))`

In [15]: `plt.subplot(121)`  
`plt.title('Monet')`  
`plt.imshow(sample_monet[0] * 0.5 + 0.5)`  
  
`plt.subplot(122)`  
`plt.title('Monet with random jitter')`  
`plt.imshow(random_jitter(sample_monet[0]) * 0.5 + 0.5)`

Out[15]: <matplotlib.image.AxesImage at 0x7bc1500666b0>



```
In [16]: OUTPUT_CHANNELS = 3
```

```
generator_g = pix2pix.unet_generator(OUTPUT_CHANNELS, norm_type='instancenorm')
generator_f = pix2pix.unet_generator(OUTPUT_CHANNELS, norm_type='instancenorm')

discriminator_x = pix2pix.discriminator(norm_type='instancenorm', target=False)
discriminator_y = pix2pix.discriminator(norm_type='instancenorm', target=False)
```

```
In [17]: print(sample_monet.shape)
```

```
to_monet = generator_g(sample_image)
to_image = generator_f(sample_monet)

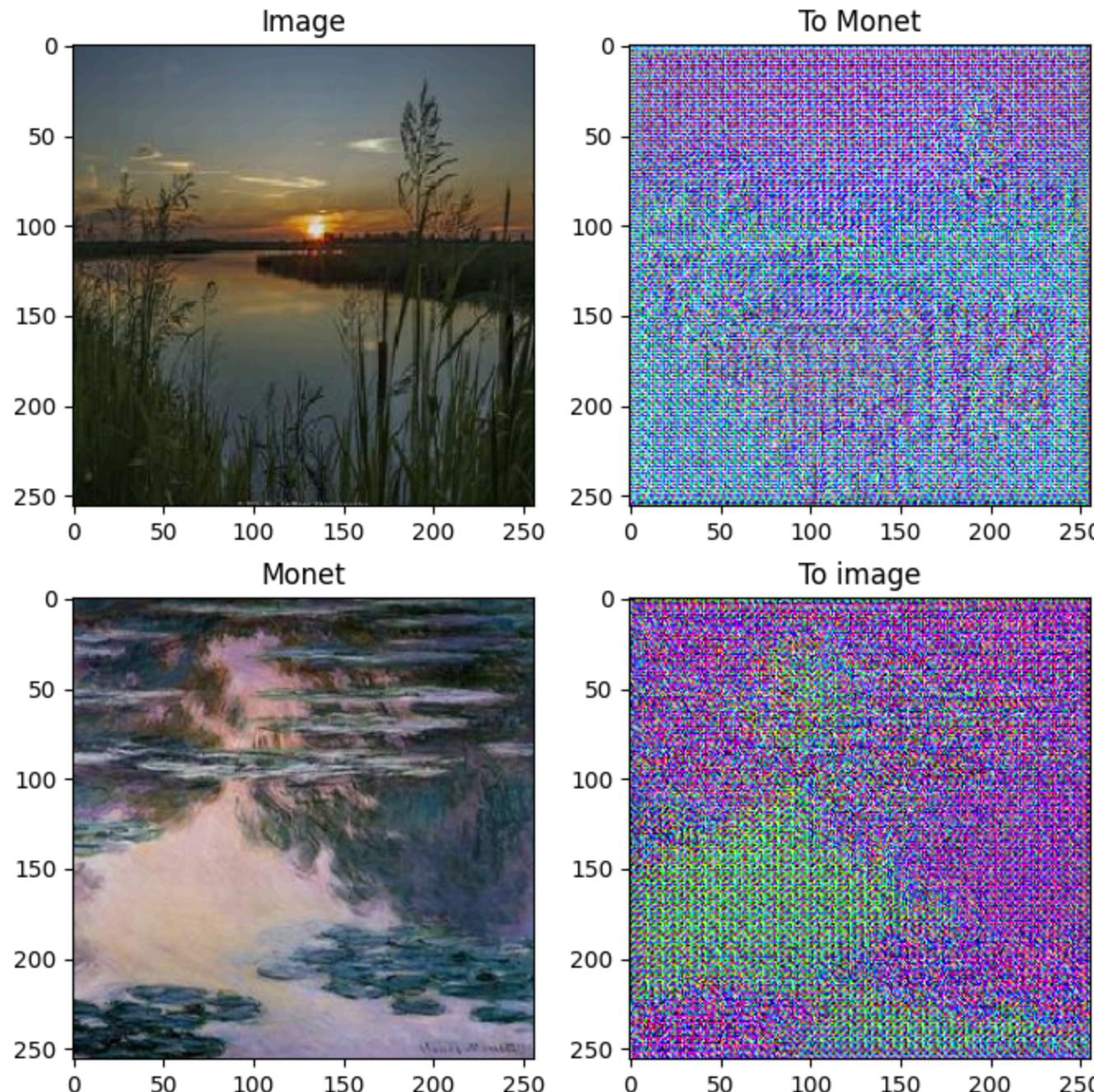
plt.figure(figsize=(8, 8))
contrast = 8

imgs = [sample_image, to_monet, sample_monet, to_image]
title = ['Image', 'To Monet', 'Monet', 'To image']

for i in range(len(imgs)):
    plt.subplot(2, 2, i+1)
    plt.title(title[i])
    if i % 2 == 0:
        plt.imshow(imgs[i][0] * 0.5 + 0.5)
    else:
```

```
plt.imshow(imgs[i][0] * 0.5 * contrast + 0.5)  
plt.show()
```

```
(1, 256, 256, 3)
```



```
In [18]: plt.figure(figsize=(8, 8))
```

```
plt.subplot(121)
plt.title('Original Monet')
plt.imshow(sample_monet[0]* 0.5 + 0.5)

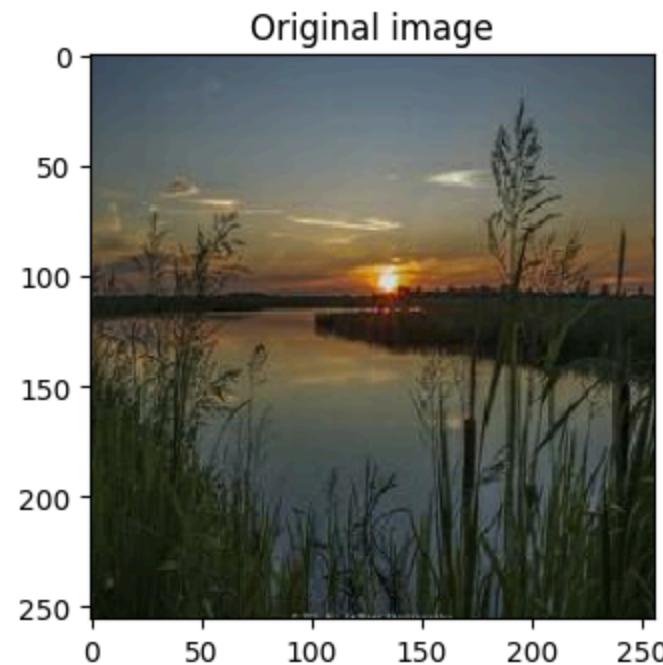
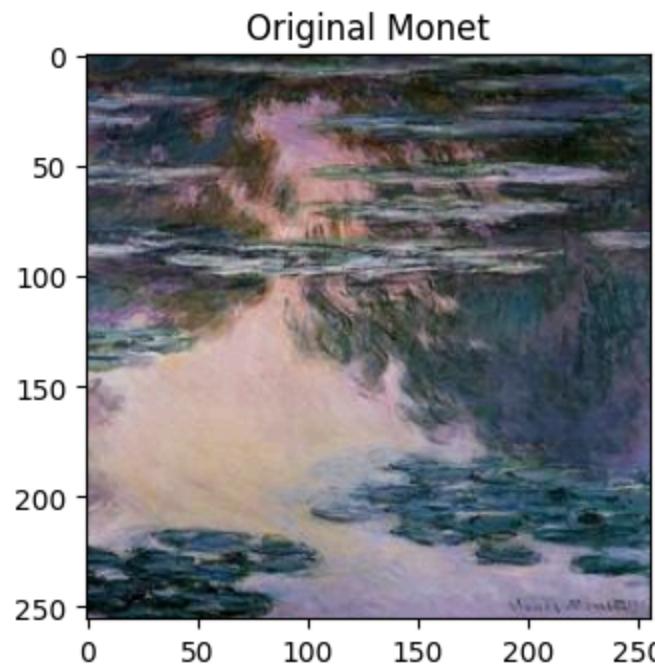
plt.subplot(122)
plt.title('Original image')
plt.imshow(sample_image[0]* 0.5 + 0.5);

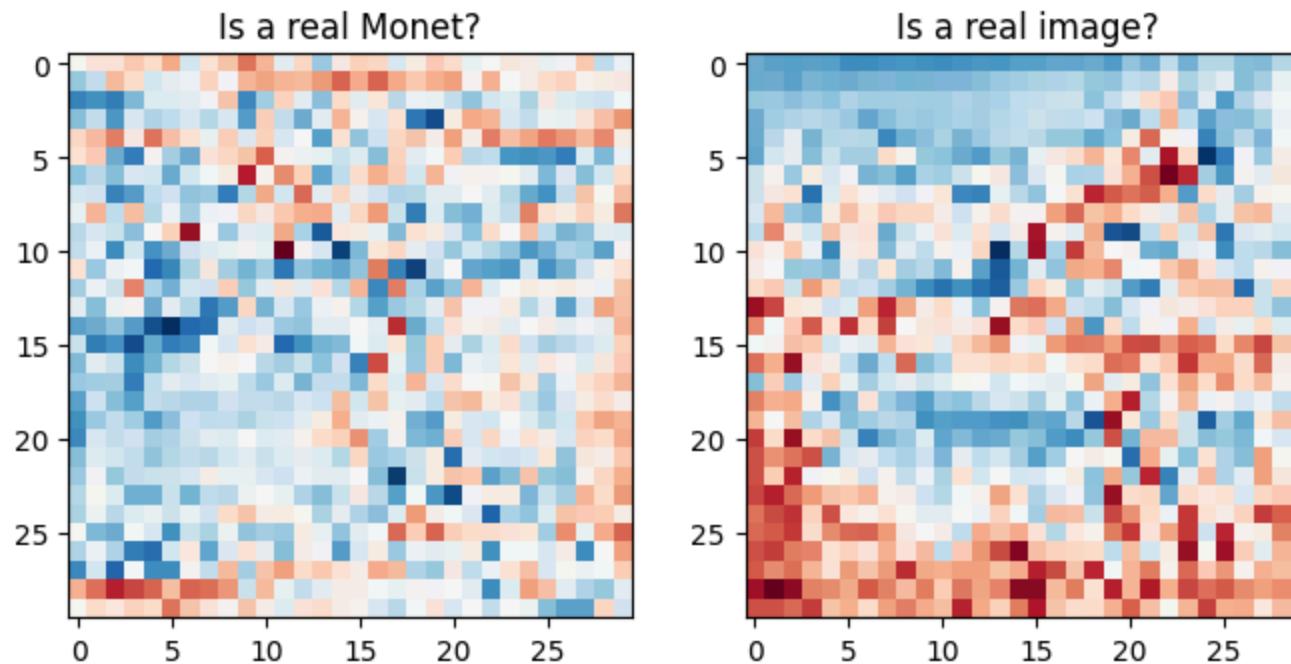
plt.show()

plt.figure(figsize=(8, 8))

plt.subplot(121)
plt.title('Is a real Monet?')
plt.imshow(discriminator_y(sample_monet)[0, ..., -1], cmap='RdBu_r')

plt.subplot(122)
plt.title('Is a real image?')
plt.imshow(discriminator_x(sample_image)[0, ..., -1], cmap='RdBu_r');
```





```
In [19]: LAMBDA = 10
loss_obj = tf.keras.losses.BinaryCrossentropy(from_logits=True)
```

```
In [20]: def discriminator_loss(real, generated):
    real_loss = loss_obj(tf.ones_like(real), real)

    generated_loss = loss_obj(tf.zeros_like(generated), generated)

    total_disc_loss = real_loss + generated_loss

    return total_disc_loss * 0.5
```

```
In [21]: def generator_loss(generated):
    return loss_obj(tf.ones_like(generated), generated)
```

```
In [22]: def calc_cycle_loss(real_image, cycled_image):
    loss1 = tf.reduce_mean(tf.abs(real_image - cycled_image))

    return LAMBDA * loss1
```

```
In [23]: def identity_loss(real_image, same_image):
    loss = tf.reduce_mean(tf.abs(real_image - same_image))
    return LAMBDA * 0.5 * loss
```

```
In [24]: generator_g_optimizer = tf.keras.optimizers.Adam(2e-4, beta_1=0.5)
generator_f_optimizer = tf.keras.optimizers.Adam(2e-4, beta_1=0.5)

discriminator_x_optimizer = tf.keras.optimizers.Adam(2e-4, beta_1=0.5)
discriminator_y_optimizer = tf.keras.optimizers.Adam(2e-4, beta_1=0.5)
```

```
In [25]: #checkpoint_path = "./checkpoints/train"
checkpoint_path = "/kaggle/working/checkpoints/train"
ckpt = tf.train.Checkpoint(generator_g=generator_g,
                           generator_f=generator_f,
                           discriminator_x=discriminator_x,
                           discriminator_y=discriminator_y,
                           generator_g_optimizer=generator_g_optimizer,
                           generator_f_optimizer=generator_f_optimizer,
                           discriminator_x_optimizer=discriminator_x_optimizer,
                           discriminator_y_optimizer=discriminator_y_optimizer)

ckpt_manager = tf.train.CheckpointManager(ckpt, checkpoint_path, max_to_keep=5)

# if a checkpoint exists, restore the latest checkpoint.
if ckpt_manager.latest_checkpoint:
    ckpt.restore(ckpt_manager.latest_checkpoint)
    print ('Latest checkpoint restored!!')
```

Latest checkpoint restored!!

```
In [26]: EPOCHS = 50
```

```
In [27]: def generate_images(model, test_input):
    prediction = model(test_input)

    plt.figure(figsize=(12, 12))

    display_list = [test_input[0], prediction[0]]
    title = ['Input Image', 'Predicted Image']

    for i in range(2):
        plt.subplot(1, 2, i+1)
        plt.title(title[i])
        # getting the pixel values between [0, 1] to plot it.
```

```
plt.imshow(display_list[i] * 0.5 + 0.5)
plt.axis('off')
plt.show()
```

```
In [28]: @tf.function
def train_step(real_x, real_y):
    # persistent is set to True because the tape is used more than
    # once to calculate the gradients.
    with tf.GradientTape(persistent=True) as tape:
        # Generator G translates X -> Y
        # Generator F translates Y -> X.

        fake_y = generator_g(real_x, training=True)
        cycled_x = generator_f(fake_y, training=True)

        fake_x = generator_f(real_y, training=True)
        cycled_y = generator_g(fake_x, training=True)

        # same_x and same_y are used for identity loss.
        same_x = generator_f(real_x, training=True)
        same_y = generator_g(real_y, training=True)

        disc_real_x = discriminator_x(real_x, training=True)
        disc_real_y = discriminator_y(real_y, training=True)

        disc_fake_x = discriminator_x(fake_x, training=True)
        disc_fake_y = discriminator_y(fake_y, training=True)

        # calculate the loss
        gen_g_loss = generator_loss(disc_fake_y)
        gen_f_loss = generator_loss(disc_fake_x)

        total_cycle_loss = calc_cycle_loss(real_x, cycled_x) + calc_cycle_loss(real_y, cycled_y)

        # Total generator loss = adversarial loss + cycle loss
        total_gen_g_loss = gen_g_loss + total_cycle_loss + identity_loss(real_y, same_y)
        total_gen_f_loss = gen_f_loss + total_cycle_loss + identity_loss(real_x, same_x)

        disc_x_loss = discriminator_loss(disc_real_x, disc_fake_x)
        disc_y_loss = discriminator_loss(disc_real_y, disc_fake_y)

        # Calculate the gradients for generator and discriminator
        generator_g_gradients = tape.gradient(total_gen_g_loss,
                                              generator_g.trainable_variables)
        generator_f_gradients = tape.gradient(total_gen_f_loss,
```

```

generator_f.trainable_variables)

discriminator_x_gradients = tape.gradient(disc_x_loss,
                                         discriminator_x.trainable_variables)
discriminator_y_gradients = tape.gradient(disc_y_loss,
                                         discriminator_y.trainable_variables)

# Apply the gradients to the optimizer
generator_g_optimizer.apply_gradients(zip(generator_g_gradients,
                                         generator_g.trainable_variables))

generator_f_optimizer.apply_gradients(zip(generator_f_gradients,
                                         generator_f.trainable_variables))

discriminator_x_optimizer.apply_gradients(zip(discriminator_x_gradients,
                                         discriminator_x.trainable_variables))

discriminator_y_optimizer.apply_gradients(zip(discriminator_y_gradients,
                                         discriminator_y.trainable_variables))

return total_gen_g_loss, total_gen_f_loss, disc_x_loss, disc_y_loss, total_cycle_loss

```

In [29]:

```

class CycleGANMetrics:
    def __init__(self):
        # Metrics for training
        self.train_metrics = {
            'total_gen_g_loss': tf.keras.metrics.Mean(name='gen_G_loss'),
            'total_gen_f_loss': tf.keras.metrics.Mean(name='gen_F_loss'),
            'disc_x_loss': tf.keras.metrics.Mean(name='disc_x_loss'),
            'disc_Y_loss': tf.keras.metrics.Mean(name='disc_Y_loss'),
            'total_cycle_loss': tf.keras.metrics.Mean(name='total_cycle_loss')
        }
        # Metrics for validation
        self.val_metrics = {
            'total_gen_g_loss': tf.keras.metrics.Mean(name='total_gen_g_loss'),
            'total_gen_f_loss': tf.keras.metrics.Mean(name='gen_F_loss'),
            'disc_x_loss': tf.keras.metrics.Mean(name='disc_x_loss'),
            'disc_Y_loss': tf.keras.metrics.Mean(name='disc_Y_loss'),
            'total_cycle_loss': tf.keras.metrics.Mean(name='total_cycle_loss')
        }
        # History storage for plotting
        self.history = {name: [] for name in list(self.train_metrics.keys()) + list(self.val_metrics.keys())}

    def update_metrics(self, losses, is_train=True):
        metrics = self.train_metrics if is_train else self.val_metrics
        for key, loss in zip(metrics, losses):

```

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        metrics[key].update_state(loss)

    def reset_metrics(self):
        for metric in list(self.train_metrics.values()) + list(self.val_metrics.values()):
            metric.reset_states()

    def record_history(self):
        for name in self.history:
            metric = self.train_metrics.get(name) or self.val_metrics.get(name)
            self.history[name].append(metric.result().numpy())

    def print_metrics(self):
        metrics_description = ' | '.join([f'{name}: {metric.result().numpy():.4f}' for name, metric in self.history.items()])
        return metrics_description

    def plot_metrics(self):
        plt.figure(figsize=(12, 8))
        for name, values in self.history.items():
            plt.plot(values, label=name)
        plt.title('Training and Metrics Over Epochs')
        plt.xlabel('Epochs')
        plt.ylabel('Loss')
        plt.legend()
        plt.grid(True)
        plt.show()

```

```
In [30]: metrics_tracker = CycleGANMetrics()
for epoch in range(EPOCHS):
    start = time.time()
    train_prog_bar = tqdm(tf.data.Dataset.zip((train_images, train_monet)), desc ='Training', total=len(tf.data.D
    n = 0
    for data in train_prog_bar:
        train_losses = train_step(data[0], data[1])
        metrics_tracker.update_metrics(train_losses, is_train = True)
        if n % 50 == 0:
            print ('.', end='')
        train_prog_bar.set_description_str(metrics_tracker.print_metrics())
        n += 1
    metrics_tracker.record_history()
#clear_output(wait=True)
# Using a consistent image (sample_image) so that the progress of the model
# is clearly visible.
generate_images(generator_g, sample_image)
```

```
if (epoch + 1) % 10 == 0:  
    ckpt_save_path = ckpt_manager.save()  
    print ('Saving checkpoint for epoch {} at {}'.format(epoch+1,  
                                                       ckpt_save_path))  
    print ('Time taken for epoch {} is {} sec\n'.format(epoch + 1,  
                                                       time.time()-start))
```

Training: 0% | 0/440 [00:00<?, ?it/s] 2024-05-06 14:22:14.730512: E tensorflow/core/grappler/optimizers/meta\_optimizer.cc:961] layout failed: INVALID\_ARGUMENT: Size of values 0 does not match size of permutation 4 @ fanin shape infunctor\_16\_1/sequential\_8\_1/dropout\_1/stateless\_dropout/SelectV2-2-TransposeNHWCToNCHW-LayoutOptimizer  
total\_gen\_g\_loss: 1.9830 | total\_gen\_f\_loss: 2.3125 | disc\_x\_loss: 0.5073 | disc\_Y\_loss: 0.5417 | total\_cycle\_loss: 1.1415: 0% | 1/440 [00:40<4:54:02, 40.19s/it]

total\_gen\_g\_loss: 2.5904 | total\_gen\_f\_loss: 2.6671 | disc\_x\_loss: 0.6033 | disc\_Y\_loss: 0.6414 | total\_cycle\_loss: 1.4064: 12% | 51/440 [00:53<01:40, 3.85it/s]

total\_gen\_g\_loss: 2.5167 | total\_gen\_f\_loss: 2.6703 | disc\_x\_loss: 0.5842 | disc\_Y\_loss: 0.6396 | total\_cycle\_loss: 1.3778: 23% | 101/440 [01:06<01:27, 3.86it/s]

total\_gen\_g\_loss: 2.5148 | total\_gen\_f\_loss: 2.6799 | disc\_x\_loss: 0.6007 | disc\_Y\_loss: 0.6469 | total\_cycle\_loss: 1.3922: 34% | 151/440 [01:19<01:15, 3.84it/s]

total\_gen\_g\_loss: 2.4827 | total\_gen\_f\_loss: 2.6325 | disc\_x\_loss: 0.5994 | disc\_Y\_loss: 0.6407 | total\_cycle\_loss: 1.3696: 46% | 201/440 [01:32<01:01, 3.86it/s]

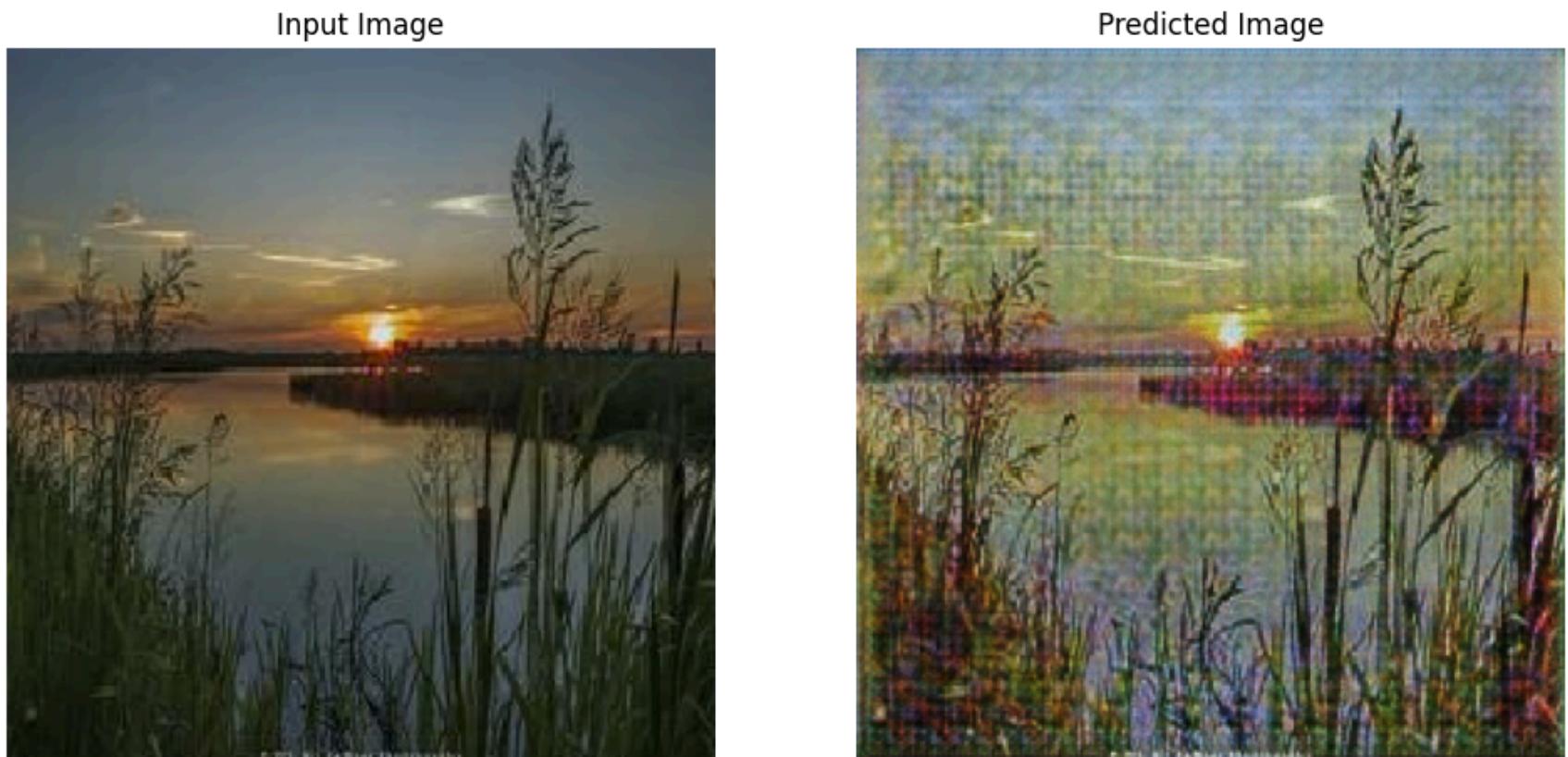
total\_gen\_g\_loss: 2.5003 | total\_gen\_f\_loss: 2.6424 | disc\_x\_loss: 0.5987 | disc\_Y\_loss: 0.6348 | total\_cycle\_loss: 1.3797: 57% | 251/440 [01:45<00:49, 3.85it/s]

total\_gen\_g\_loss: 2.5316 | total\_gen\_f\_loss: 2.6826 | disc\_x\_loss: 0.5963 | disc\_Y\_loss: 0.6343 | total\_cycle\_loss: 1.3988: 68% | 301/440 [01:58<00:36, 3.84it/s]

total\_gen\_g\_loss: 2.5185 | total\_gen\_f\_loss: 2.6664 | disc\_x\_loss: 0.5963 | disc\_Y\_loss: 0.6365 | total\_cycle\_loss: 1.3930: 80% | 351/440 [02:11<00:23, 3.85it/s]

total\_gen\_g\_loss: 2.4979 | total\_gen\_f\_loss: 2.6453 | disc\_x\_loss: 0.6032 | disc\_Y\_loss: 0.6391 | total\_cycle\_loss: 1.3822: 91% | 401/440 [02:24<00:10, 3.85it/s]

total\_gen\_g\_loss: 2.4942 | total\_gen\_f\_loss: 2.6441 | disc\_x\_loss: 0.6026 | disc\_Y\_loss: 0.6396 | total\_cycle\_loss: 1.3824: 100% | 440/440 [02:34<00:00, 2.85it/s]



```
total_gen_g_loss: 2.4943 | total_gen_f_loss: 2.6454 | disc_x_loss: 0.6021 | disc_Y_loss: 0.6395 | total_cycle_loss: 1.3829:  0%|          | 1/440 [00:04<35:46,  4.89s/it]
```

```
total_gen_g_loss: 2.4941 | total_gen_f_loss: 2.6432 | disc_x_loss: 0.6045 | disc_Y_loss: 0.6390 | total_cycle_loss: 1.3855:  12%|■          | 51/440 [00:17<01:41,  3.84it/s]
```

```
total_gen_g_loss: 2.4985 | total_gen_f_loss: 2.6451 | disc_x_loss: 0.6051 | disc_Y_loss: 0.6377 | total_cycle_loss: 1.3888:  23%|■          | 101/440 [00:30<01:28,  3.85it/s]
```

```
total_gen_g_loss: 2.4987 | total_gen_f_loss: 2.6386 | disc_x_loss: 0.6058 | disc_Y_loss: 0.6386 | total_cycle_loss: 1.3899:  34%|■          | 151/440 [00:43<01:14,  3.86it/s]
```

```
total_gen_g_loss: 2.5004 | total_gen_f_loss: 2.6337 | disc_x_loss: 0.6059 | disc_Y_loss: 0.6368 | total_cycle_loss: 1.3879:  46%|■          | 201/440 [00:56<01:02,  3.84it/s]
```

```
total_gen_g_loss: 2.4916 | total_gen_f_loss: 2.6240 | disc_x_loss: 0.6071 | disc_Y_loss: 0.6400 | total_cycle_loss: 1.3842:  57%|■          | 251/440 [01:09<00:49,  3.84it/s]
```

```
total_gen_g_loss: 2.4904 | total_gen_f_loss: 2.6243 | disc_x_loss: 0.6073 | disc_Y_loss: 0.6388 | total_cycle_loss: 1.3850: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.4842 | total_gen_f_loss: 2.6224 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6381 | total_cycle_loss: 1.3823: 80%|██████| 351/440 [01:35<00:23, 3.84it/s]
```

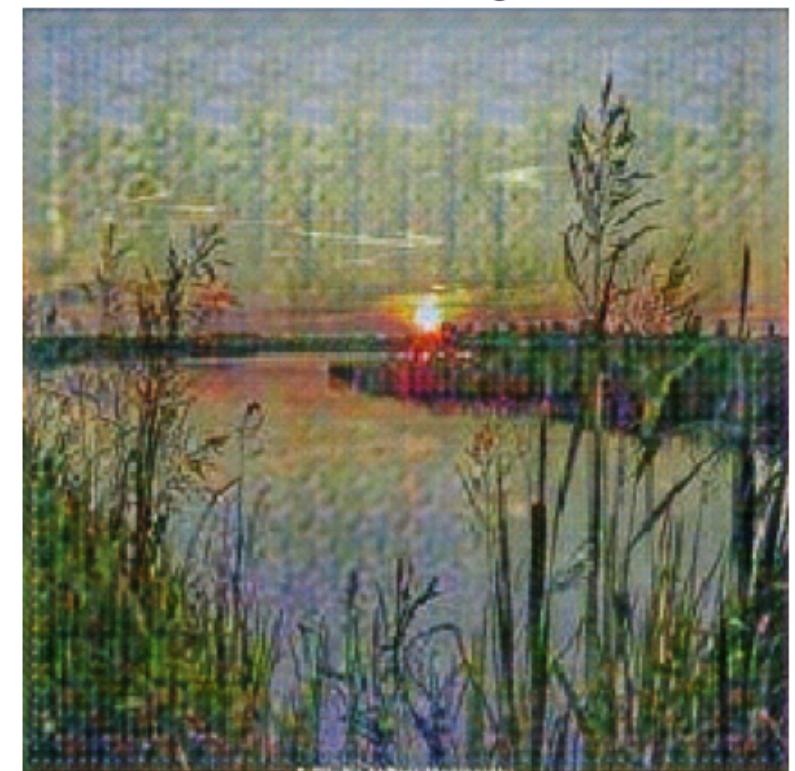
```
total_gen_g_loss: 2.4813 | total_gen_f_loss: 2.6160 | disc_x_loss: 0.6084 | disc_Y_loss: 0.6371 | total_cycle_loss: 1.3795: 91%|██████| 401/440 [01:48<00:10, 3.84it/s]
```

```
total_gen_g_loss: 2.4764 | total_gen_f_loss: 2.6125 | disc_x_loss: 0.6087 | disc_Y_loss: 0.6396 | total_cycle_loss: 1.3787: 100%|██████| 440/440 [01:59<00:00, 3.69it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4757 | total_gen_f_loss: 2.6121 | disc_x_loss: 0.6088 | disc_Y_loss: 0.6399 | total_cycle_loss: 1.3786: 0%|          | 1/440 [00:04<35:08, 4.80s/it]
```

```
total_gen_g_loss: 2.4784 | total_gen_f_loss: 2.6146 | disc_x_loss: 0.6080 | disc_Y_loss: 0.6393 | total_cycle_loss: 1.3801: 12%|█       | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.4763 | total_gen_f_loss: 2.6126 | disc_x_loss: 0.6091 | disc_Y_loss: 0.6402 | total_cycle_loss: 1.3801: 23%|██████| 101/440 [00:30<01:28, 3.84it/s]

total_gen_g_loss: 2.4710 | total_gen_f_loss: 2.6065 | disc_x_loss: 0.6092 | disc_Y_loss: 0.6397 | total_cycle_loss: 1.3753: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.4702 | total_gen_f_loss: 2.6028 | disc_x_loss: 0.6108 | disc_Y_loss: 0.6399 | total_cycle_loss: 1.3758: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.4729 | total_gen_f_loss: 2.6035 | disc_x_loss: 0.6097 | disc_Y_loss: 0.6387 | total_cycle_loss: 1.3756: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.4721 | total_gen_f_loss: 2.6047 | disc_x_loss: 0.6093 | disc_Y_loss: 0.6388 | total_cycle_loss: 1.3755: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.4697 | total_gen_f_loss: 2.6011 | disc_x_loss: 0.6107 | disc_Y_loss: 0.6386 | total_cycle_loss: 1.3733: 80%|██████| 351/440 [01:35<00:23, 3.87it/s]

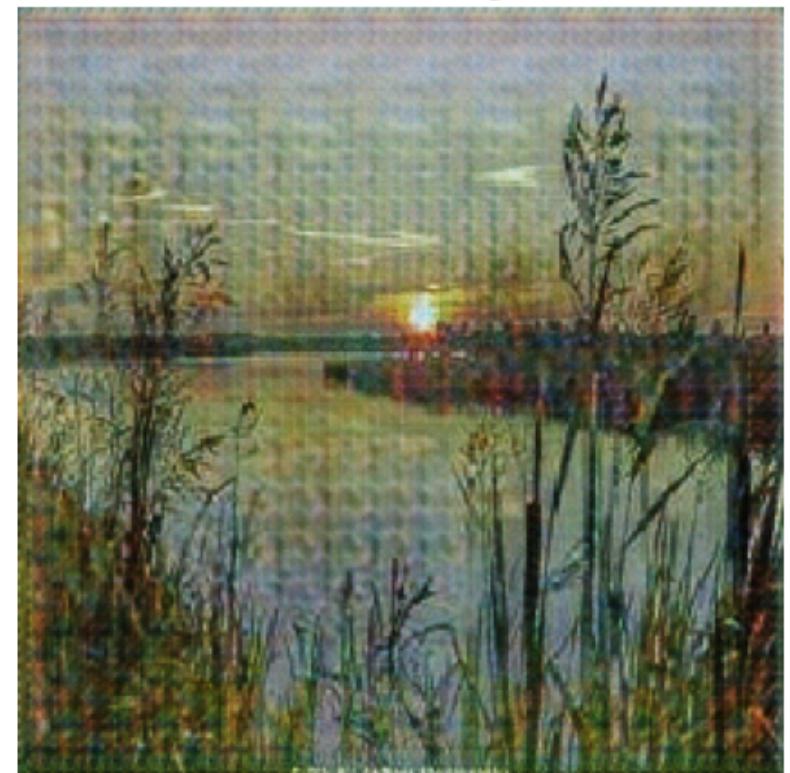
total_gen_g_loss: 2.4728 | total_gen_f_loss: 2.6014 | disc_x_loss: 0.6103 | disc_Y_loss: 0.6383 | total_cycle_loss: 1.3742: 91%|██████| 401/440 [01:48<00:10, 3.87it/s]

total_gen_g_loss: 2.4747 | total_gen_f_loss: 2.6025 | disc_x_loss: 0.6093 | disc_Y_loss: 0.6371 | total_cycle_loss: 1.3734: 100%|████████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4750 | total_gen_f_loss: 2.6027 | disc_x_loss: 0.6093 | disc_Y_loss: 0.6369 | total_cycle_loss: 1.3735:  0%|          | 1/440 [00:05<37:05,  5.07s/it]
```

```
total_gen_g_loss: 2.4818 | total_gen_f_loss: 2.6082 | disc_x_loss: 0.6097 | disc_Y_loss: 0.6377 | total_cycle_loss: 1.3796:  12%|■          | 51/440 [00:18<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.4878 | total_gen_f_loss: 2.6149 | disc_x_loss: 0.6087 | disc_Y_loss: 0.6372 | total_cycle_loss: 1.3843:  23%|■          | 101/440 [00:30<01:27,  3.87it/s]
```

```
total_gen_g_loss: 2.4841 | total_gen_f_loss: 2.6110 | disc_x_loss: 0.6089 | disc_Y_loss: 0.6379 | total_cycle_loss: 1.3818:  34%|■          | 151/440 [00:43<01:15,  3.84it/s]
```

```
total_gen_g_loss: 2.4867 | total_gen_f_loss: 2.6134 | disc_x_loss: 0.6097 | disc_Y_loss: 0.6377 | total_cycle_loss: 1.3841:  46%|■          | 201/440 [00:56<01:02,  3.81it/s]
```

```
total_gen_g_loss: 2.4843 | total_gen_f_loss: 2.6102 | disc_x_loss: 0.6095 | disc_Y_loss: 0.6373 | total_cycle_loss: 1.3827:  57%|■          | 251/440 [01:09<00:49,  3.85it/s]
```

```
total_gen_g_loss: 2.4869 | total_gen_f_loss: 2.6098 | disc_x_loss: 0.6092 | disc_Y_loss: 0.6366 | total_cycle_loss: 1.3819: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.4850 | total_gen_f_loss: 2.6089 | disc_x_loss: 0.6106 | disc_Y_loss: 0.6380 | total_cycle_loss: 1.3818: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

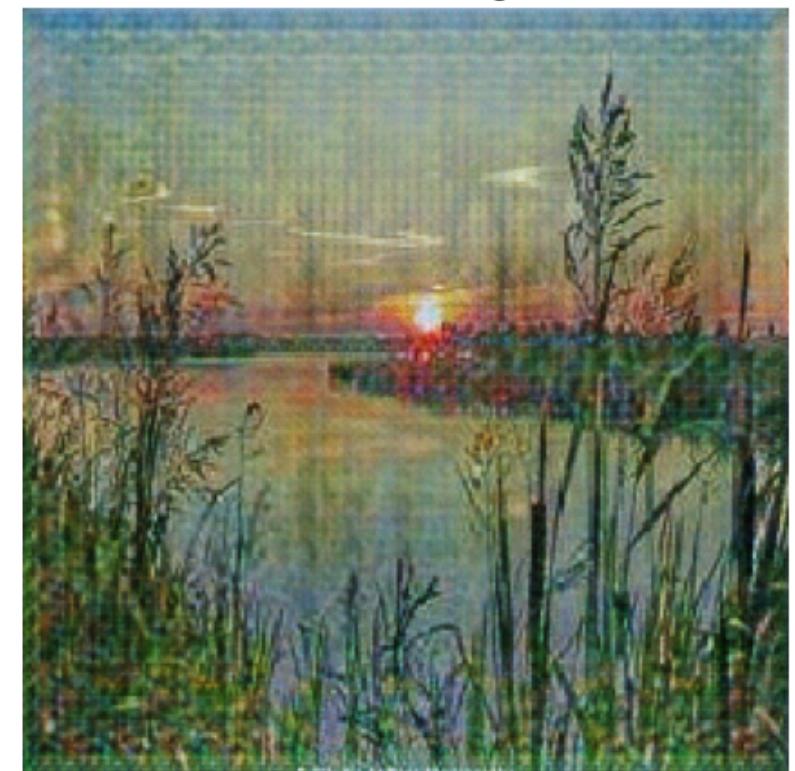
```
total_gen_g_loss: 2.4829 | total_gen_f_loss: 2.6065 | disc_x_loss: 0.6111 | disc_Y_loss: 0.6388 | total_cycle_loss: 1.3802: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.4801 | total_gen_f_loss: 2.6035 | disc_x_loss: 0.6104 | disc_Y_loss: 0.6382 | total_cycle_loss: 1.3774: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4802 | total_gen_f_loss: 2.6038 | disc_x_loss: 0.6103 | disc_Y_loss: 0.6381 | total_cycle_loss: 1.3774: 0%|          | 1/440 [00:04<35:35, 4.86s/it]
```

```
total_gen_g_loss: 2.4800 | total_gen_f_loss: 2.6029 | disc_x_loss: 0.6111 | disc_Y_loss: 0.6380 | total_cycle_loss: 1.3770: 12%|█       | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.4777 | total_gen_f_loss: 2.6007 | disc_x_loss: 0.6106 | disc_Y_loss: 0.6378 | total_cycle_loss: 1.3759: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.4763 | total_gen_f_loss: 2.5999 | disc_x_loss: 0.6106 | disc_Y_loss: 0.6381 | total_cycle_loss: 1.3756: 34%|██████| 151/440 [00:43<01:15, 3.84it/s]

total_gen_g_loss: 2.4741 | total_gen_f_loss: 2.5958 | disc_x_loss: 0.6112 | disc_Y_loss: 0.6381 | total_cycle_loss: 1.3736: 46%|██████| 201/440 [00:56<01:01, 3.86it/s]

total_gen_g_loss: 2.4716 | total_gen_f_loss: 2.5915 | disc_x_loss: 0.6115 | disc_Y_loss: 0.6381 | total_cycle_loss: 1.3718: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.4700 | total_gen_f_loss: 2.5901 | disc_x_loss: 0.6113 | disc_Y_loss: 0.6383 | total_cycle_loss: 1.3713: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]

total_gen_g_loss: 2.4684 | total_gen_f_loss: 2.5879 | disc_x_loss: 0.6109 | disc_Y_loss: 0.6386 | total_cycle_loss: 1.3699: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

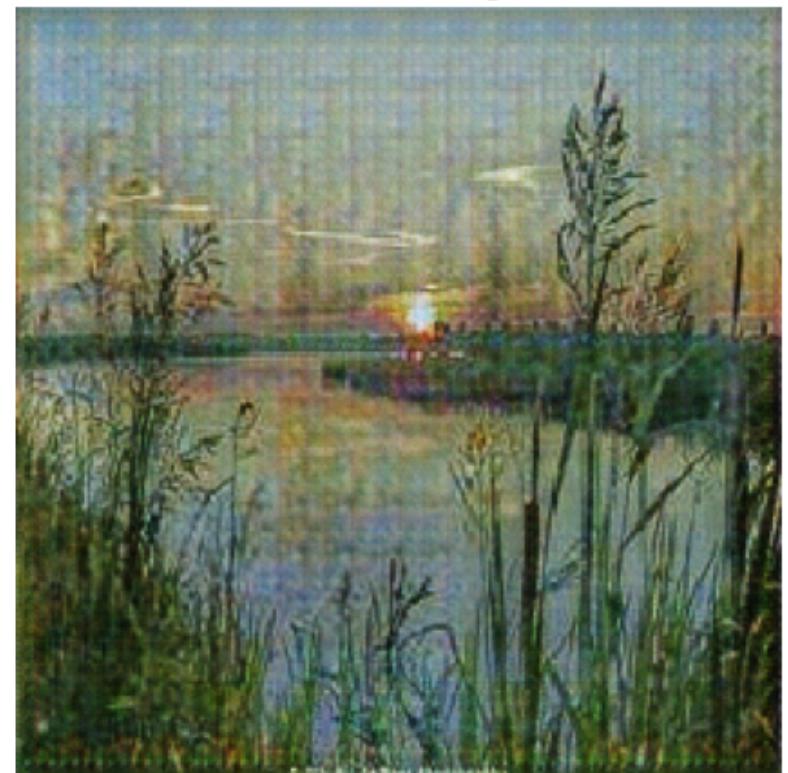
total_gen_g_loss: 2.4659 | total_gen_f_loss: 2.5868 | disc_x_loss: 0.6107 | disc_Y_loss: 0.6383 | total_cycle_loss: 1.3679: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.4663 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6105 | disc_Y_loss: 0.6380 | total_cycle_loss: 1.3682: 100%|████████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4661 | total_gen_f_loss: 2.5882 | disc_x_loss: 0.6103 | disc_Y_loss: 0.6380 | total_cycle_loss: 1.3680:  0%|          | 1/440 [00:04<35:05,  4.80s/it]
```

```
total_gen_g_loss: 2.4666 | total_gen_f_loss: 2.5879 | disc_x_loss: 0.6103 | disc_Y_loss: 0.6376 | total_cycle_loss: 1.3679:  12%|■         | 51/440 [00:17<01:41,  3.85it/s]
```

```
total_gen_g_loss: 2.4666 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6106 | disc_Y_loss: 0.6376 | total_cycle_loss: 1.3684:  23%|■         | 101/440 [00:30<01:28,  3.84it/s]
```

```
total_gen_g_loss: 2.4653 | total_gen_f_loss: 2.5857 | disc_x_loss: 0.6115 | disc_Y_loss: 0.6377 | total_cycle_loss: 1.3676:  34%|■         | 151/440 [00:43<01:15,  3.85it/s]
```

```
total_gen_g_loss: 2.4660 | total_gen_f_loss: 2.5863 | disc_x_loss: 0.6110 | disc_Y_loss: 0.6376 | total_cycle_loss: 1.3686:  46%|■         | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.4655 | total_gen_f_loss: 2.5845 | disc_x_loss: 0.6107 | disc_Y_loss: 0.6366 | total_cycle_loss: 1.3674:  57%|■         | 251/440 [01:09<00:48,  3.87it/s]
```

```
total_gen_g_loss: 2.4674 | total_gen_f_loss: 2.5857 | disc_x_loss: 0.6111 | disc_Y_loss: 0.6360 | total_cycle_loss: 1.3686: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.4689 | total_gen_f_loss: 2.5867 | disc_x_loss: 0.6110 | disc_Y_loss: 0.6358 | total_cycle_loss: 1.3689: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]
```

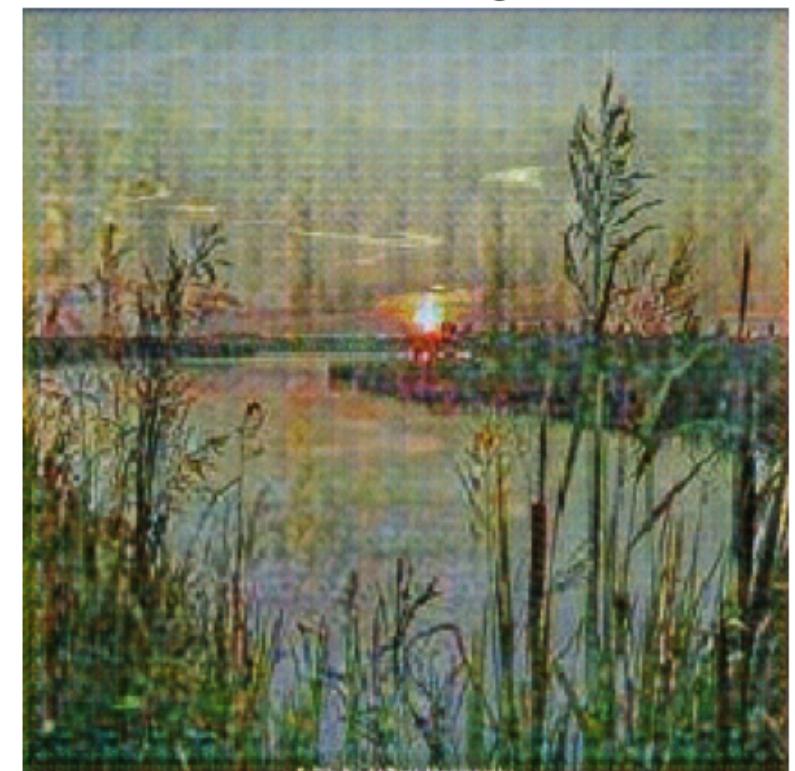
```
total_gen_g_loss: 2.4683 | total_gen_f_loss: 2.5857 | disc_x_loss: 0.6108 | disc_Y_loss: 0.6357 | total_cycle_loss: 1.3678: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]
```

```
total_gen_g_loss: 2.4696 | total_gen_f_loss: 2.5876 | disc_x_loss: 0.6104 | disc_Y_loss: 0.6356 | total_cycle_loss: 1.3688: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4695 | total_gen_f_loss: 2.5875 | disc_x_loss: 0.6103 | disc_Y_loss: 0.6356 | total_cycle_loss: 1.3688: 0%|          | 1/440 [00:04<35:08, 4.80s/it]
```

```
total_gen_g_loss: 2.4698 | total_gen_f_loss: 2.5890 | disc_x_loss: 0.6102 | disc_Y_loss: 0.6353 | total_cycle_loss: 1.3693: 12%|█       | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.4701 | total_gen_f_loss: 2.5889 | disc_x_loss: 0.6100 | disc_Y_loss: 0.6356 | total_cycle
_loss: 1.3697: 23%|██████| 101/440 [00:30<01:28, 3.83it/s]

total_gen_g_loss: 2.4692 | total_gen_f_loss: 2.5895 | disc_x_loss: 0.6100 | disc_Y_loss: 0.6363 | total_cycle
_loss: 1.3701: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.4687 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6105 | disc_Y_loss: 0.6358 | total_cycle
_loss: 1.3699: 46%|██████| 201/440 [00:56<01:02, 3.84it/s]

total_gen_g_loss: 2.4723 | total_gen_f_loss: 2.5897 | disc_x_loss: 0.6098 | disc_Y_loss: 0.6343 | total_cycle
_loss: 1.3705: 57%|██████| 251/440 [01:09<00:48, 3.86it/s]

total_gen_g_loss: 2.4763 | total_gen_f_loss: 2.5923 | disc_x_loss: 0.6091 | disc_Y_loss: 0.6341 | total_cycle
_loss: 1.3725: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]

total_gen_g_loss: 2.4789 | total_gen_f_loss: 2.5941 | disc_x_loss: 0.6096 | disc_Y_loss: 0.6339 | total_cycle
_loss: 1.3745: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]

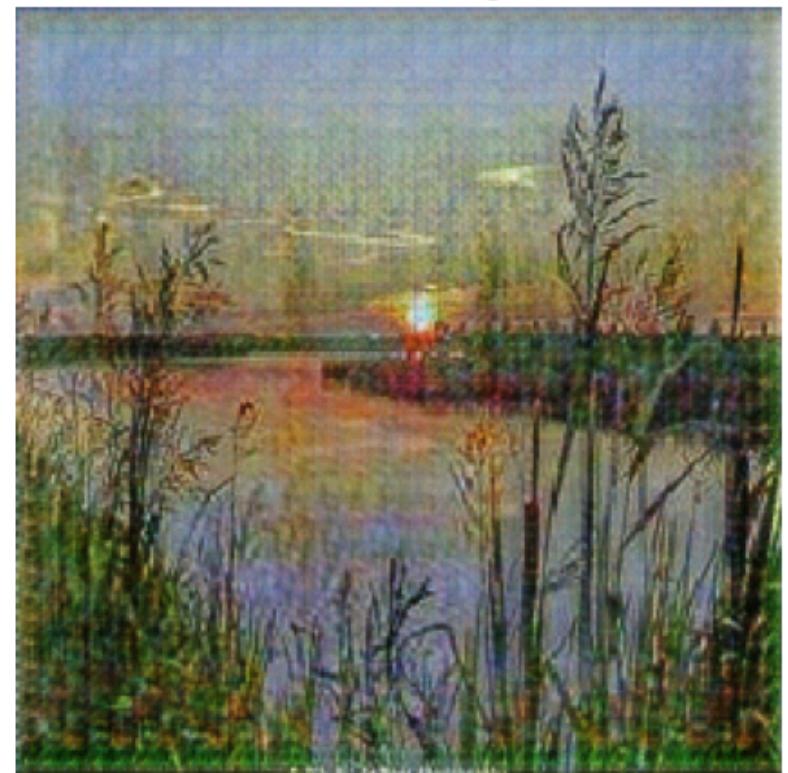
total_gen_g_loss: 2.4778 | total_gen_f_loss: 2.5922 | disc_x_loss: 0.6096 | disc_Y_loss: 0.6334 | total_cycle
_loss: 1.3732: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.4774 | total_gen_f_loss: 2.5908 | disc_x_loss: 0.6100 | disc_Y_loss: 0.6333 | total_cycle
_loss: 1.3725: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4773 | total_gen_f_loss: 2.5907 | disc_x_loss: 0.6100 | disc_Y_loss: 0.6333 | total_cycle_loss: 1.3725:  0%|          | 1/440 [00:04<35:40,  4.88s/it]
```

```
total_gen_g_loss: 2.4805 | total_gen_f_loss: 2.5930 | disc_x_loss: 0.6093 | disc_Y_loss: 0.6326 | total_cycle_loss: 1.3735:  12%|■         | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.4816 | total_gen_f_loss: 2.5925 | disc_x_loss: 0.6099 | disc_Y_loss: 0.6329 | total_cycle_loss: 1.3742:  23%|■         | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.4825 | total_gen_f_loss: 2.5920 | disc_x_loss: 0.6096 | disc_Y_loss: 0.6321 | total_cycle_loss: 1.3735:  34%|■         | 151/440 [00:43<01:14,  3.86it/s]
```

```
total_gen_g_loss: 2.4817 | total_gen_f_loss: 2.5911 | disc_x_loss: 0.6093 | disc_Y_loss: 0.6318 | total_cycle_loss: 1.3725:  46%|■         | 201/440 [00:56<01:02,  3.84it/s]
```

```
total_gen_g_loss: 2.4837 | total_gen_f_loss: 2.5924 | disc_x_loss: 0.6092 | disc_Y_loss: 0.6317 | total_cycle_loss: 1.3731:  57%|■         | 251/440 [01:09<00:49,  3.82it/s]
```

```
total_gen_g_loss: 2.4851 | total_gen_f_loss: 2.5930 | disc_x_loss: 0.6092 | disc_Y_loss: 0.6310 | total_cycle_loss: 1.3734: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]
```

```
total_gen_g_loss: 2.4867 | total_gen_f_loss: 2.5949 | disc_x_loss: 0.6086 | disc_Y_loss: 0.6306 | total_cycle_loss: 1.3743: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]
```

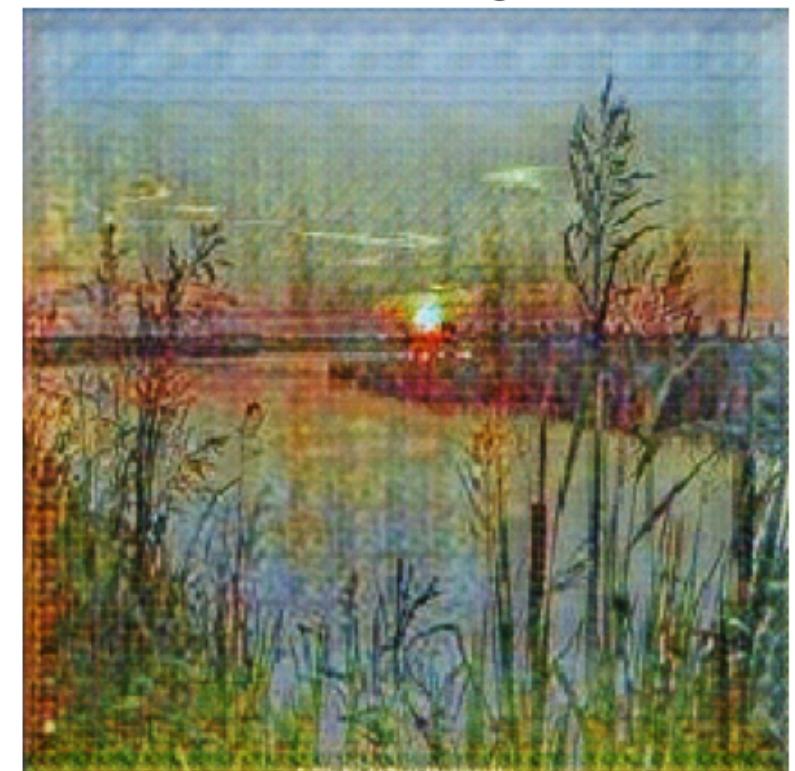
```
total_gen_g_loss: 2.4869 | total_gen_f_loss: 2.5947 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6305 | total_cycle_loss: 1.3740: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.4876 | total_gen_f_loss: 2.5944 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6305 | total_cycle_loss: 1.3739: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4877 | total_gen_f_loss: 2.5945 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6305 | total_cycle_loss: 1.3739: 0%|          | 1/440 [00:04<35:48, 4.89s/it]
```

```
total_gen_g_loss: 2.4887 | total_gen_f_loss: 2.5948 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6304 | total_cycle_loss: 1.3743: 12%|█       | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.4886 | total_gen_f_loss: 2.5947 | disc_x_loss: 0.6087 | disc_Y_loss: 0.6306 | total_cycle
_loss: 1.3748: 23%|██████| 101/440 [00:30<01:28, 3.85it/s]

total_gen_g_loss: 2.4894 | total_gen_f_loss: 2.5957 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6301 | total_cycle
_loss: 1.3752: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.4882 | total_gen_f_loss: 2.5950 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6303 | total_cycle
_loss: 1.3743: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.4876 | total_gen_f_loss: 2.5947 | disc_x_loss: 0.6079 | disc_Y_loss: 0.6302 | total_cycle
_loss: 1.3740: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.4885 | total_gen_f_loss: 2.5951 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6301 | total_cycle
_loss: 1.3746: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.4886 | total_gen_f_loss: 2.5955 | disc_x_loss: 0.6079 | disc_Y_loss: 0.6301 | total_cycle
_loss: 1.3746: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

total_gen_g_loss: 2.4875 | total_gen_f_loss: 2.5950 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6302 | total_cycle
_loss: 1.3740: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.4873 | total_gen_f_loss: 2.5940 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6300 | total_cycle
_loss: 1.3737: 100%|████████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.4873 | total_gen_f_loss: 2.5939 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6299 | total_cycle_loss: 1.3737:  0%|          | 1/440 [00:04<35:53,  4.90s/it]
```

```
total_gen_g_loss: 2.4881 | total_gen_f_loss: 2.5951 | disc_x_loss: 0.6076 | disc_Y_loss: 0.6296 | total_cycle_loss: 1.3740:  12%|■         | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.4875 | total_gen_f_loss: 2.5945 | disc_x_loss: 0.6083 | disc_Y_loss: 0.6296 | total_cycle_loss: 1.3741:  23%|■         | 101/440 [00:30<01:28,  3.85it/s]
```

```
total_gen_g_loss: 2.4899 | total_gen_f_loss: 2.5954 | disc_x_loss: 0.6083 | disc_Y_loss: 0.6291 | total_cycle_loss: 1.3751:  34%|■         | 151/440 [00:43<01:15,  3.85it/s]
```

```
total_gen_g_loss: 2.4899 | total_gen_f_loss: 2.5964 | disc_x_loss: 0.6077 | disc_Y_loss: 0.6293 | total_cycle_loss: 1.3750:  46%|■         | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.4904 | total_gen_f_loss: 2.5957 | disc_x_loss: 0.6079 | disc_Y_loss: 0.6289 | total_cycle_loss: 1.3748:  57%|■         | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.4908 | total_gen_f_loss: 2.5952 | disc_x_loss: 0.6079 | disc_Y_loss: 0.6285 | total_cycle_loss: 1.3747: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.4906 | total_gen_f_loss: 2.5938 | disc_x_loss: 0.6079 | disc_Y_loss: 0.6284 | total_cycle_loss: 1.3742: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

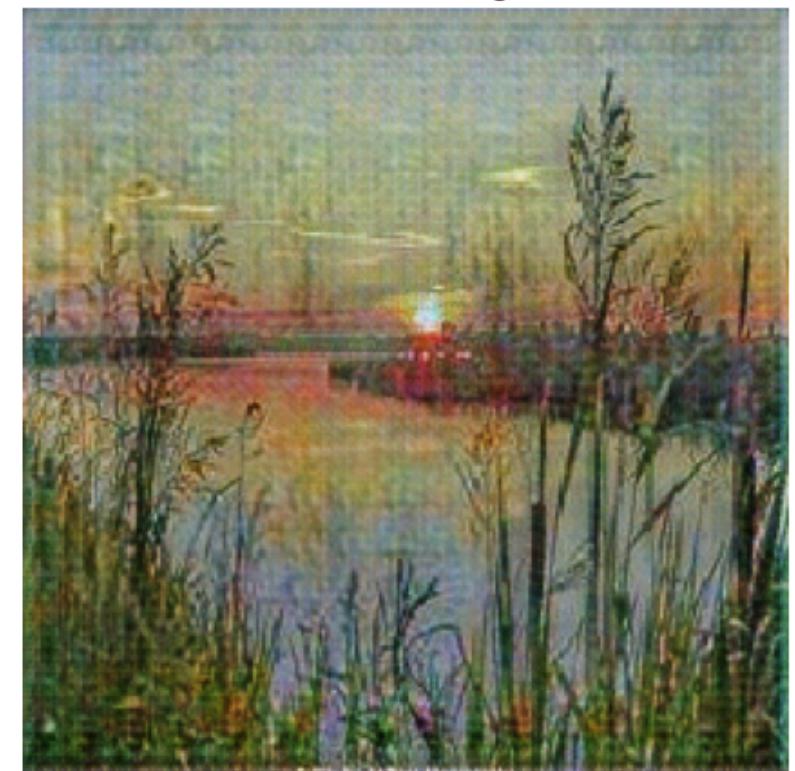
total_gen_g_loss: 2.4916 | total_gen_f_loss: 2.5944 | disc_x_loss: 0.6080 | disc_Y_loss: 0.6288 | total_cycle_loss: 1.3749: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.4910 | total_gen_f_loss: 2.5935 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6288 | total_cycle_loss: 1.3747: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



Saving checkpoint for epoch 10 at /kaggle/working/checkpoints/train/ckpt-3  
Time taken for epoch 10 is 122.23032736778259 sec

```
total_gen_g_loss: 2.4910 | total_gen_f_loss: 2.5935 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6288 | total_cycle_loss: 1.3747: 0%|          | 1/440 [00:04<35:32, 4.86s/it]
```

```
total_gen_g_loss: 2.4918 | total_gen_f_loss: 2.5927 | disc_x_loss: 0.6086 | disc_Y_loss: 0.6285 | total_cycle
_loss: 1.3747: 12%|███████| 51/440 [00:17<01:40, 3.86it/s]

total_gen_g_loss: 2.4906 | total_gen_f_loss: 2.5913 | disc_x_loss: 0.6086 | disc_Y_loss: 0.6284 | total_cycle
_loss: 1.3739: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.4914 | total_gen_f_loss: 2.5916 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6282 | total_cycle
_loss: 1.3741: 34%|██████| 151/440 [00:43<01:15, 3.85it/s]

total_gen_g_loss: 2.4920 | total_gen_f_loss: 2.5909 | disc_x_loss: 0.6083 | disc_Y_loss: 0.6278 | total_cycle
_loss: 1.3738: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

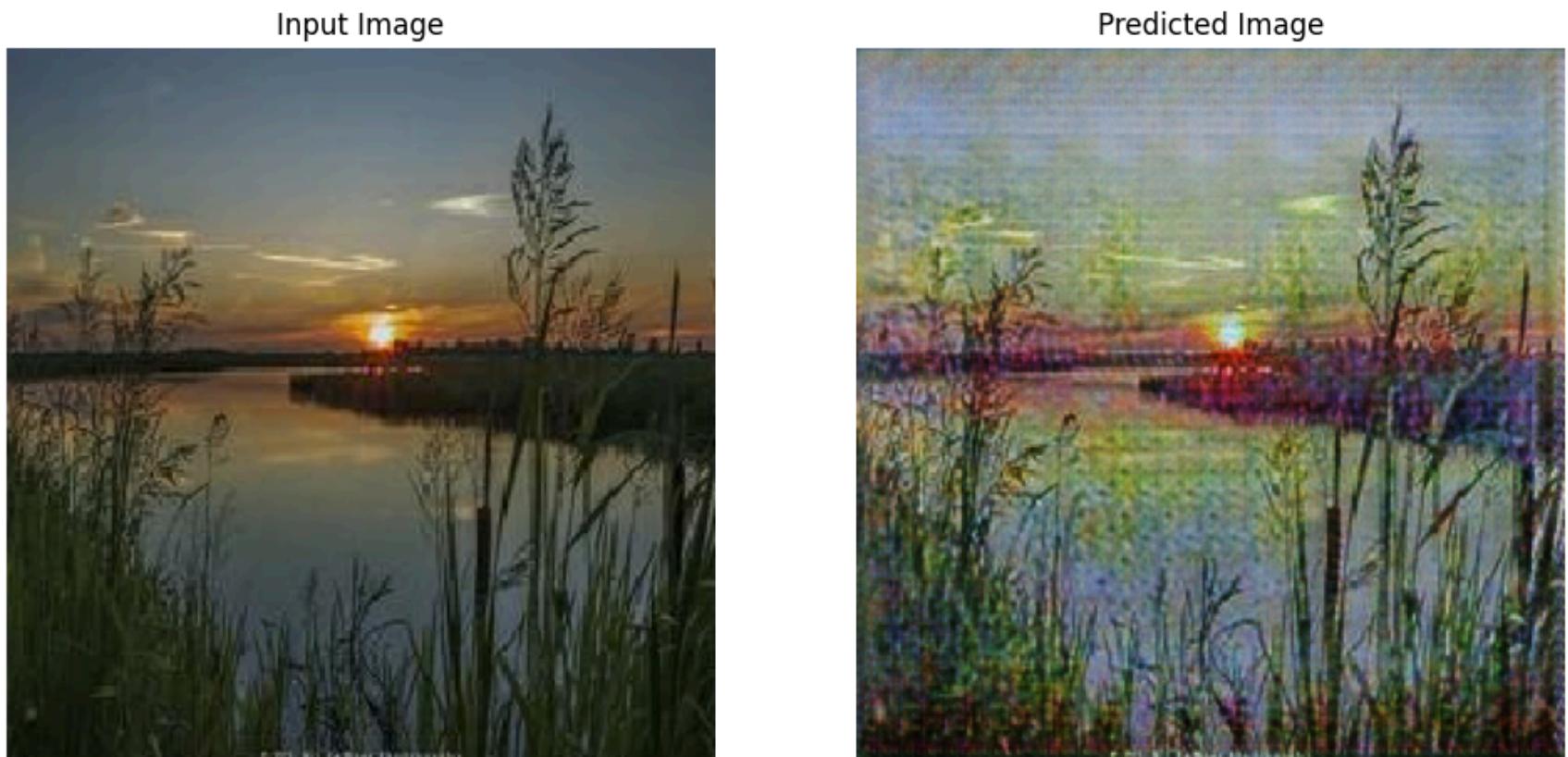
total_gen_g_loss: 2.4914 | total_gen_f_loss: 2.5900 | disc_x_loss: 0.6088 | disc_Y_loss: 0.6283 | total_cycle
_loss: 1.3733: 57%|██████| 251/440 [01:09<00:49, 3.82it/s]

total_gen_g_loss: 2.4914 | total_gen_f_loss: 2.5891 | disc_x_loss: 0.6087 | disc_Y_loss: 0.6278 | total_cycle
_loss: 1.3728: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.4909 | total_gen_f_loss: 2.5889 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6276 | total_cycle
_loss: 1.3723: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

total_gen_g_loss: 2.4934 | total_gen_f_loss: 2.5895 | disc_x_loss: 0.6086 | disc_Y_loss: 0.6274 | total_cycle
_loss: 1.3733: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.4951 | total_gen_f_loss: 2.5900 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6267 | total_cycle
_loss: 1.3735: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```



```
total_gen_g_loss: 2.4952 | total_gen_f_loss: 2.5900 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6267 | total_cycle_loss: 1.3735:  0%|          | 1/440 [00:04<35:53,  4.91s/it]
```

```
total_gen_g_loss: 2.4971 | total_gen_f_loss: 2.5903 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6261 | total_cycle_loss: 1.3737:  12%|■          | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.4983 | total_gen_f_loss: 2.5909 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6258 | total_cycle_loss: 1.3743:  23%|■          | 101/440 [00:30<01:27,  3.85it/s]
```

```
total_gen_g_loss: 2.4995 | total_gen_f_loss: 2.5915 | disc_x_loss: 0.6084 | disc_Y_loss: 0.6257 | total_cycle_loss: 1.3751:  34%|■          | 151/440 [00:43<01:15,  3.81it/s]
```

```
total_gen_g_loss: 2.5005 | total_gen_f_loss: 2.5921 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6258 | total_cycle_loss: 1.3757:  46%|■          | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.4998 | total_gen_f_loss: 2.5918 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6258 | total_cycle_loss: 1.3754:  57%|■          | 251/440 [01:09<00:48,  3.87it/s]
```

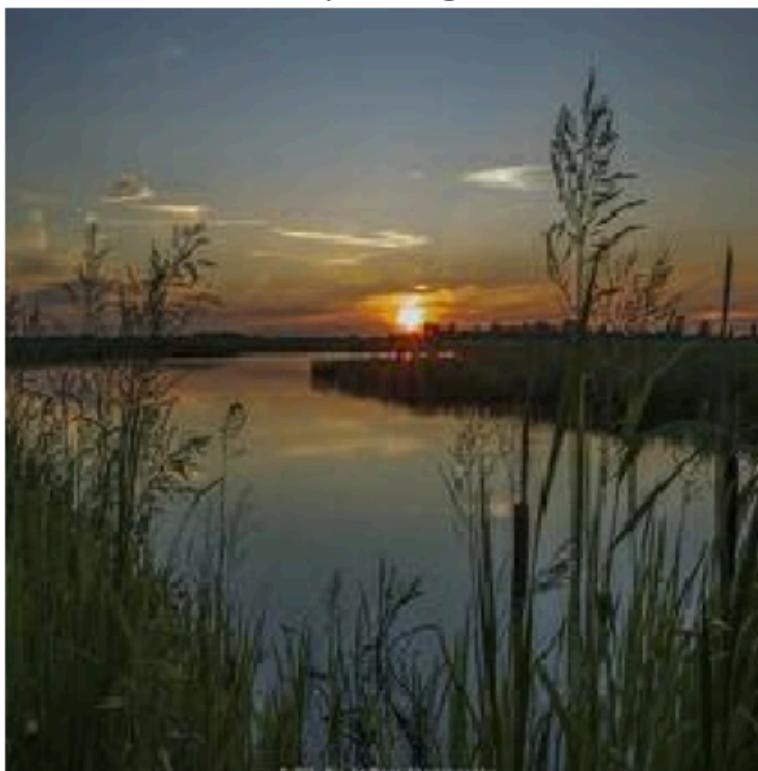
```
total_gen_g_loss: 2.4993 | total_gen_f_loss: 2.5910 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6260 | total_cycle_loss: 1.3752: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]
```

```
total_gen_g_loss: 2.4994 | total_gen_f_loss: 2.5908 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6257 | total_cycle_loss: 1.3751: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

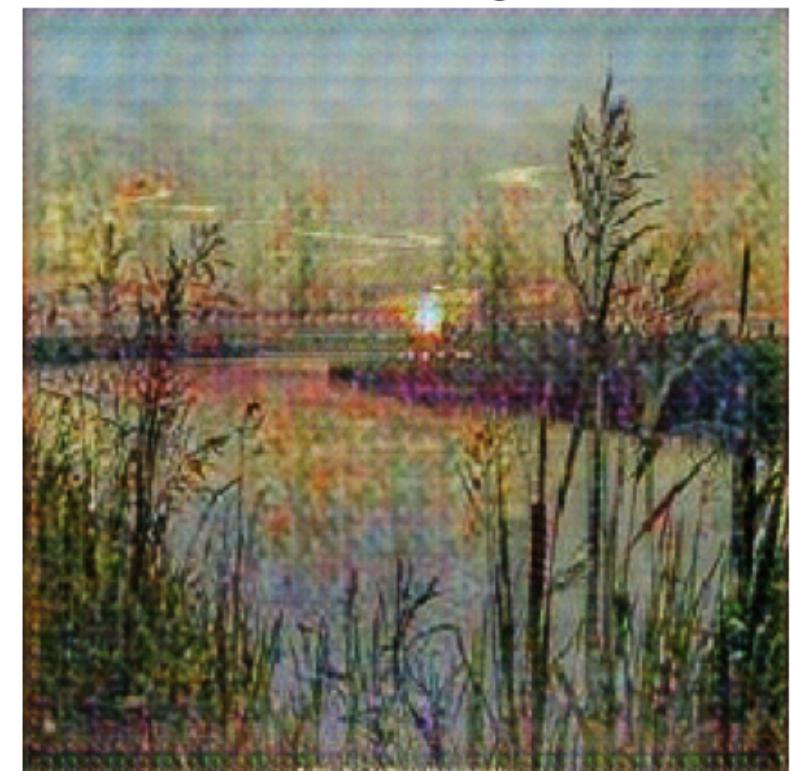
```
total_gen_g_loss: 2.5008 | total_gen_f_loss: 2.5928 | disc_x_loss: 0.6080 | disc_Y_loss: 0.6256 | total_cycle_loss: 1.3761: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.5004 | total_gen_f_loss: 2.5929 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6256 | total_cycle_loss: 1.3761: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5003 | total_gen_f_loss: 2.5929 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6256 | total_cycle_loss: 1.3761: 0%|          | 1/440 [00:04<35:26, 4.84s/it]
```

```
total_gen_g_loss: 2.4998 | total_gen_f_loss: 2.5920 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6258 | total_cycle_loss: 1.3757: 12%|█       | 51/440 [00:17<01:41, 3.84it/s]
```

```
total_gen_g_loss: 2.4988 | total_gen_f_loss: 2.5904 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6255 | total_cycle
_loss: 1.3748: 23%|██████| 101/440 [00:30<01:28, 3.85it/s]

total_gen_g_loss: 2.4997 | total_gen_f_loss: 2.5918 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6256 | total_cycle
_loss: 1.3757: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.5002 | total_gen_f_loss: 2.5915 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6253 | total_cycle
_loss: 1.3756: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.5013 | total_gen_f_loss: 2.5913 | disc_x_loss: 0.6080 | disc_Y_loss: 0.6247 | total_cycle
_loss: 1.3754: 57%|██████| 251/440 [01:09<00:49, 3.83it/s]

total_gen_g_loss: 2.5002 | total_gen_f_loss: 2.5898 | disc_x_loss: 0.6084 | disc_Y_loss: 0.6249 | total_cycle
_loss: 1.3745: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]

total_gen_g_loss: 2.5007 | total_gen_f_loss: 2.5894 | disc_x_loss: 0.6083 | disc_Y_loss: 0.6247 | total_cycle
_loss: 1.3744: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

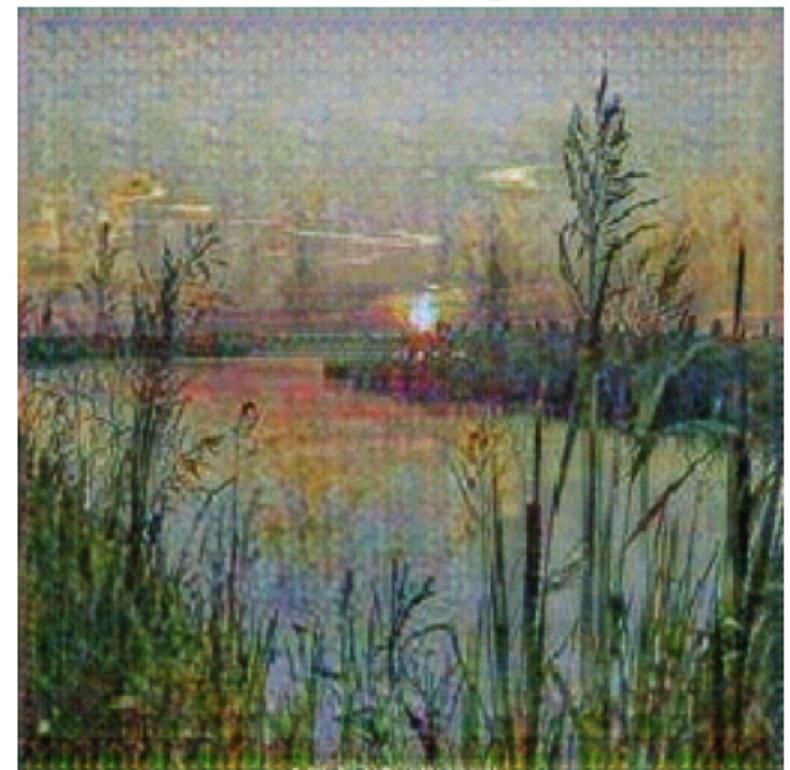
total_gen_g_loss: 2.5001 | total_gen_f_loss: 2.5892 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6248 | total_cycle
_loss: 1.3742: 91%|██████| 401/440 [01:48<00:10, 3.87it/s]

total_gen_g_loss: 2.5001 | total_gen_f_loss: 2.5894 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6251 | total_cycle
_loss: 1.3745: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5002 | total_gen_f_loss: 2.5894 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6250 | total_cycle_loss: 1.3745:  0%|          | 1/440 [00:04<35:36,  4.87s/it]
```

```
total_gen_g_loss: 2.5008 | total_gen_f_loss: 2.5894 | disc_x_loss: 0.6083 | disc_Y_loss: 0.6245 | total_cycle_loss: 1.3747:  12%|■         | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.4999 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6245 | total_cycle_loss: 1.3741:  23%|■         | 101/440 [00:30<01:28,  3.84it/s]
```

```
total_gen_g_loss: 2.5002 | total_gen_f_loss: 2.5886 | disc_x_loss: 0.6083 | disc_Y_loss: 0.6243 | total_cycle_loss: 1.3744:  34%|■         | 151/440 [00:43<01:15,  3.85it/s]
```

```
total_gen_g_loss: 2.5009 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6242 | total_cycle_loss: 1.3748:  46%|■         | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.5006 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6244 | total_cycle_loss: 1.3748:  57%|■         | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.5006 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6079 | disc_Y_loss: 0.6244 | total_cycle_loss: 1.3748: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]
```

```
total_gen_g_loss: 2.5004 | total_gen_f_loss: 2.5882 | disc_x_loss: 0.6080 | disc_Y_loss: 0.6244 | total_cycle_loss: 1.3748: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

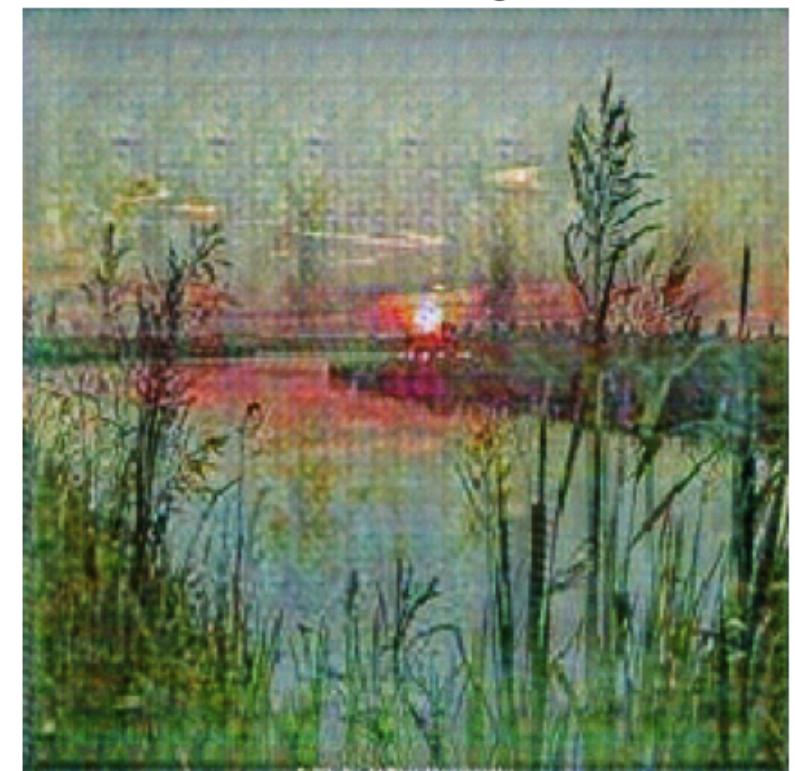
```
total_gen_g_loss: 2.5001 | total_gen_f_loss: 2.5873 | disc_x_loss: 0.6079 | disc_Y_loss: 0.6240 | total_cycle_loss: 1.3740: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.5006 | total_gen_f_loss: 2.5870 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6238 | total_cycle_loss: 1.3741: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5006 | total_gen_f_loss: 2.5870 | disc_x_loss: 0.6081 | disc_Y_loss: 0.6238 | total_cycle_loss: 1.3740: 0%|          | 1/440 [00:04<35:21, 4.83s/it]
```

```
total_gen_g_loss: 2.5002 | total_gen_f_loss: 2.5858 | disc_x_loss: 0.6085 | disc_Y_loss: 0.6238 | total_cycle_loss: 1.3736: 12%|█       | 51/440 [00:17<01:41, 3.85it/s]
```

```
total_gen_g_loss: 2.5012 | total_gen_f_loss: 2.5869 | disc_x_loss: 0.6082 | disc_Y_loss: 0.6237 | total_cycle
_loss: 1.3743: 23%|██████| 101/440 [00:30<01:28, 3.83it/s]

total_gen_g_loss: 2.5020 | total_gen_f_loss: 2.5879 | disc_x_loss: 0.6080 | disc_Y_loss: 0.6236 | total_cycle
_loss: 1.3748: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.5027 | total_gen_f_loss: 2.5890 | disc_x_loss: 0.6075 | disc_Y_loss: 0.6236 | total_cycle
_loss: 1.3753: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.5031 | total_gen_f_loss: 2.5892 | disc_x_loss: 0.6075 | disc_Y_loss: 0.6233 | total_cycle
_loss: 1.3754: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.5039 | total_gen_f_loss: 2.5895 | disc_x_loss: 0.6076 | disc_Y_loss: 0.6232 | total_cycle
_loss: 1.3757: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.5045 | total_gen_f_loss: 2.5899 | disc_x_loss: 0.6075 | disc_Y_loss: 0.6230 | total_cycle
_loss: 1.3759: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]

total_gen_g_loss: 2.5039 | total_gen_f_loss: 2.5892 | disc_x_loss: 0.6074 | disc_Y_loss: 0.6227 | total_cycle
_loss: 1.3750: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.5030 | total_gen_f_loss: 2.5885 | disc_x_loss: 0.6075 | disc_Y_loss: 0.6230 | total_cycle
_loss: 1.3745: 100%|████████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5029 | total_gen_f_loss: 2.5886 | disc_x_loss: 0.6075 | disc_Y_loss: 0.6230 | total_cycle_loss: 1.3745:  0%|          | 1/440 [00:04<36:31,  4.99s/it]
```

```
total_gen_g_loss: 2.5023 | total_gen_f_loss: 2.5882 | disc_x_loss: 0.6075 | disc_Y_loss: 0.6231 | total_cycle_loss: 1.3742:  12%|■         | 51/440 [00:17<01:41,  3.85it/s]
```

```
total_gen_g_loss: 2.5029 | total_gen_f_loss: 2.5885 | disc_x_loss: 0.6075 | disc_Y_loss: 0.6230 | total_cycle_loss: 1.3745:  23%|■         | 101/440 [00:30<01:27,  3.87it/s]
```

```
total_gen_g_loss: 2.5022 | total_gen_f_loss: 2.5881 | disc_x_loss: 0.6072 | disc_Y_loss: 0.6228 | total_cycle_loss: 1.3739:  34%|■         | 151/440 [00:43<01:15,  3.85it/s]
```

```
total_gen_g_loss: 2.5024 | total_gen_f_loss: 2.5883 | disc_x_loss: 0.6071 | disc_Y_loss: 0.6225 | total_cycle_loss: 1.3739:  46%|■         | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.5024 | total_gen_f_loss: 2.5882 | disc_x_loss: 0.6069 | disc_Y_loss: 0.6224 | total_cycle_loss: 1.3736:  57%|■         | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.5025 | total_gen_f_loss: 2.5882 | disc_x_loss: 0.6068 | disc_Y_loss: 0.6223 | total_cycle_loss: 1.3738: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]
```

```
total_gen_g_loss: 2.5030 | total_gen_f_loss: 2.5885 | disc_x_loss: 0.6070 | disc_Y_loss: 0.6221 | total_cycle_loss: 1.3739: 80%|██████| 351/440 [01:35<00:23, 3.84it/s]
```

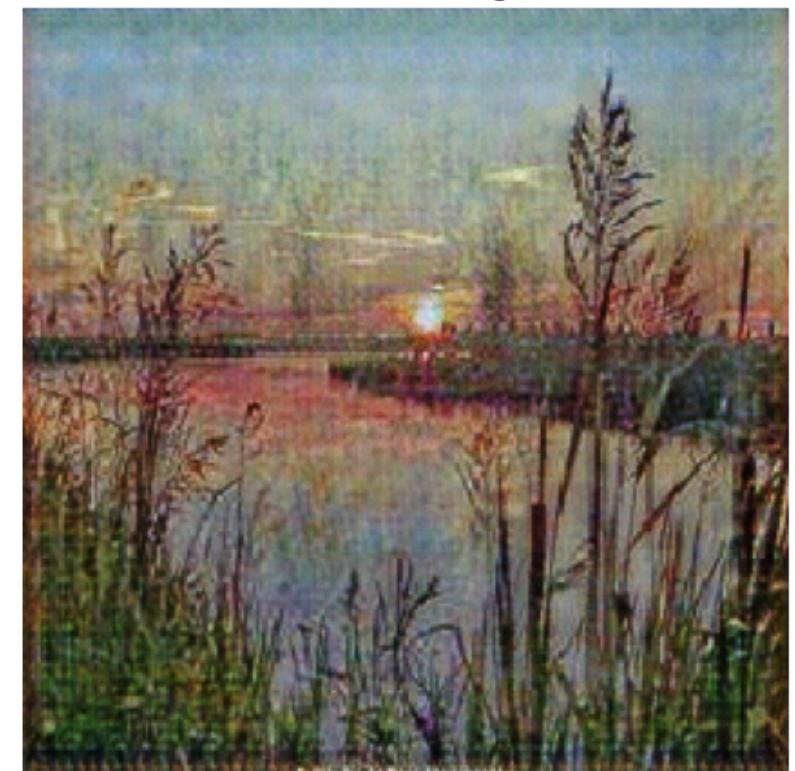
```
total_gen_g_loss: 2.5030 | total_gen_f_loss: 2.5884 | disc_x_loss: 0.6070 | disc_Y_loss: 0.6220 | total_cycle_loss: 1.3738: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]
```

```
total_gen_g_loss: 2.5030 | total_gen_f_loss: 2.5881 | disc_x_loss: 0.6071 | disc_Y_loss: 0.6219 | total_cycle_loss: 1.3736: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5031 | total_gen_f_loss: 2.5881 | disc_x_loss: 0.6070 | disc_Y_loss: 0.6219 | total_cycle_loss: 1.3737: 0%|          | 1/440 [00:04<35:56, 4.91s/it]
```

```
total_gen_g_loss: 2.5032 | total_gen_f_loss: 2.5877 | disc_x_loss: 0.6071 | disc_Y_loss: 0.6215 | total_cycle_loss: 1.3733: 12%|█       | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.5037 | total_gen_f_loss: 2.5885 | disc_x_loss: 0.6072 | disc_Y_loss: 0.6219 | total_cycle
_loss: 1.3738: 23%|██████| 101/440 [00:30<01:28, 3.85it/s]

total_gen_g_loss: 2.5031 | total_gen_f_loss: 2.5878 | disc_x_loss: 0.6072 | disc_Y_loss: 0.6218 | total_cycle
_loss: 1.3732: 34%|██████| 151/440 [00:43<01:15, 3.84it/s]

total_gen_g_loss: 2.5037 | total_gen_f_loss: 2.5885 | disc_x_loss: 0.6069 | disc_Y_loss: 0.6216 | total_cycle
_loss: 1.3735: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.5044 | total_gen_f_loss: 2.5889 | disc_x_loss: 0.6069 | disc_Y_loss: 0.6215 | total_cycle
_loss: 1.3739: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.5048 | total_gen_f_loss: 2.5892 | disc_x_loss: 0.6068 | disc_Y_loss: 0.6212 | total_cycle
_loss: 1.3740: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.5054 | total_gen_f_loss: 2.5897 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6210 | total_cycle
_loss: 1.3743: 80%|██████| 351/440 [01:35<00:23, 3.84it/s]

total_gen_g_loss: 2.5062 | total_gen_f_loss: 2.5904 | disc_x_loss: 0.6065 | disc_Y_loss: 0.6208 | total_cycle
_loss: 1.3745: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.5063 | total_gen_f_loss: 2.5901 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6206 | total_cycle
_loss: 1.3745: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5063 | total_gen_f_loss: 2.5901 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6206 | total_cycle_loss: 1.3745:  0%|          | 1/440 [00:04<35:33,  4.86s/it]
```

```
total_gen_g_loss: 2.5067 | total_gen_f_loss: 2.5900 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6205 | total_cycle_loss: 1.3748:  12%|■         | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.5076 | total_gen_f_loss: 2.5909 | disc_x_loss: 0.6062 | disc_Y_loss: 0.6202 | total_cycle_loss: 1.3752:  23%|■         | 101/440 [00:30<01:27,  3.85it/s]
```

```
total_gen_g_loss: 2.5088 | total_gen_f_loss: 2.5915 | disc_x_loss: 0.6062 | disc_Y_loss: 0.6197 | total_cycle_loss: 1.3755:  34%|■         | 151/440 [00:43<01:15,  3.82it/s]
```

```
total_gen_g_loss: 2.5111 | total_gen_f_loss: 2.5929 | disc_x_loss: 0.6059 | disc_Y_loss: 0.6194 | total_cycle_loss: 1.3764:  46%|■         | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.5116 | total_gen_f_loss: 2.5934 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6194 | total_cycle_loss: 1.3768:  57%|■         | 251/440 [01:09<00:49,  3.86it/s]
```

```
total_gen_g_loss: 2.5120 | total_gen_f_loss: 2.5937 | disc_x_loss: 0.6065 | disc_Y_loss: 0.6195 | total_cycle_loss: 1.3772: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]
```

```
total_gen_g_loss: 2.5122 | total_gen_f_loss: 2.5934 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6194 | total_cycle_loss: 1.3772: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

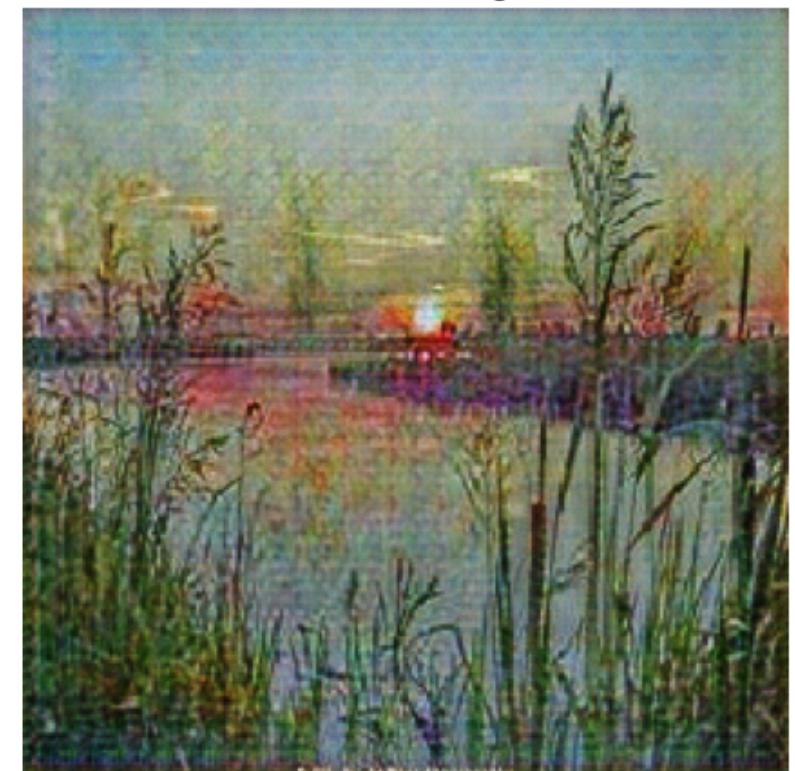
```
total_gen_g_loss: 2.5122 | total_gen_f_loss: 2.5930 | disc_x_loss: 0.6065 | disc_Y_loss: 0.6192 | total_cycle_loss: 1.3770: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.5121 | total_gen_f_loss: 2.5927 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6192 | total_cycle_loss: 1.3770: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5121 | total_gen_f_loss: 2.5927 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6192 | total_cycle_loss: 1.3770: 0%|          | 1/440 [00:04<36:05, 4.93s/it]
```

```
total_gen_g_loss: 2.5125 | total_gen_f_loss: 2.5934 | disc_x_loss: 0.6067 | disc_Y_loss: 0.6194 | total_cycle_loss: 1.3776: 12%|█       | 51/440 [00:17<01:41, 3.81it/s]
```

```
total_gen_g_loss: 2.5120 | total_gen_f_loss: 2.5928 | disc_x_loss: 0.6067 | disc_Y_loss: 0.6194 | total_cycle
_loss: 1.3773: 23%|██████| 101/440 [00:30<01:28, 3.85it/s]

total_gen_g_loss: 2.5121 | total_gen_f_loss: 2.5931 | disc_x_loss: 0.6066 | disc_Y_loss: 0.6193 | total_cycle
_loss: 1.3774: 34%|██████| 151/440 [00:43<01:14, 3.87it/s]

total_gen_g_loss: 2.5132 | total_gen_f_loss: 2.5939 | disc_x_loss: 0.6064 | disc_Y_loss: 0.6190 | total_cycle
_loss: 1.3779: 46%|██████| 201/440 [00:56<01:01, 3.86it/s]

total_gen_g_loss: 2.5135 | total_gen_f_loss: 2.5935 | disc_x_loss: 0.6064 | disc_Y_loss: 0.6187 | total_cycle
_loss: 1.3779: 57%|██████| 251/440 [01:09<00:49, 3.84it/s]

total_gen_g_loss: 2.5135 | total_gen_f_loss: 2.5934 | disc_x_loss: 0.6063 | disc_Y_loss: 0.6185 | total_cycle
_loss: 1.3778: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]

total_gen_g_loss: 2.5143 | total_gen_f_loss: 2.5942 | disc_x_loss: 0.6065 | disc_Y_loss: 0.6184 | total_cycle
_loss: 1.3783: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

total_gen_g_loss: 2.5149 | total_gen_f_loss: 2.5935 | disc_x_loss: 0.6065 | disc_Y_loss: 0.6179 | total_cycle
_loss: 1.3778: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.5148 | total_gen_f_loss: 2.5931 | disc_x_loss: 0.6064 | disc_Y_loss: 0.6180 | total_cycle
_loss: 1.3777: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5147 | total_gen_f_loss: 2.5931 | disc_x_loss: 0.6065 | disc_Y_loss: 0.6181 | total_cycle_loss: 1.3777:  0%|          | 1/440 [00:04<35:41,  4.88s/it]
```

```
total_gen_g_loss: 2.5155 | total_gen_f_loss: 2.5933 | disc_x_loss: 0.6063 | disc_Y_loss: 0.6176 | total_cycle_loss: 1.3777:  12%|■         | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.5162 | total_gen_f_loss: 2.5936 | disc_x_loss: 0.6062 | disc_Y_loss: 0.6173 | total_cycle_loss: 1.3779:  23%|■         | 101/440 [00:30<01:28,  3.85it/s]
```

```
total_gen_g_loss: 2.5169 | total_gen_f_loss: 2.5935 | disc_x_loss: 0.6063 | disc_Y_loss: 0.6173 | total_cycle_loss: 1.3780:  34%|■         | 151/440 [00:43<01:15,  3.85it/s]
```

```
total_gen_g_loss: 2.5170 | total_gen_f_loss: 2.5934 | disc_x_loss: 0.6062 | disc_Y_loss: 0.6172 | total_cycle_loss: 1.3780:  46%|■         | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.5170 | total_gen_f_loss: 2.5933 | disc_x_loss: 0.6062 | disc_Y_loss: 0.6173 | total_cycle_loss: 1.3780:  57%|■         | 251/440 [01:09<00:49,  3.85it/s]
```

```
total_gen_g_loss: 2.5185 | total_gen_f_loss: 2.5945 | disc_x_loss: 0.6061 | disc_Y_loss: 0.6171 | total_cycle_loss: 1.3788: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]

total_gen_g_loss: 2.5187 | total_gen_f_loss: 2.5947 | disc_x_loss: 0.6062 | disc_Y_loss: 0.6171 | total_cycle_loss: 1.3791: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

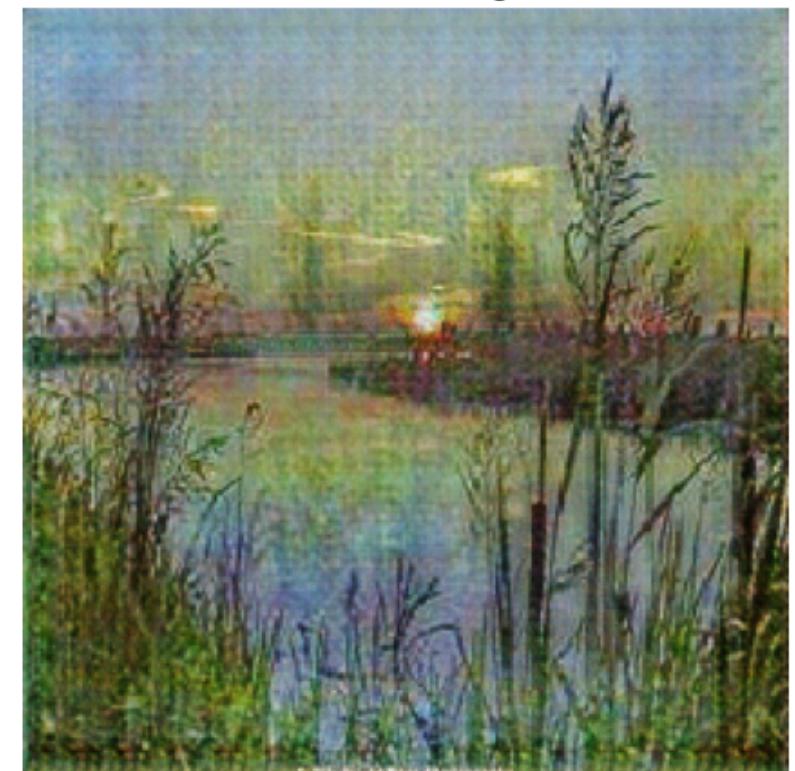
total_gen_g_loss: 2.5198 | total_gen_f_loss: 2.5954 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6169 | total_cycle_loss: 1.3796: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.5204 | total_gen_f_loss: 2.5960 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6168 | total_cycle_loss: 1.3802: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



Saving checkpoint for epoch 20 at /kaggle/working/checkpoints/train/ckpt-4  
Time taken for epoch 20 is 121.95592260360718 sec

```
total_gen_g_loss: 2.5205 | total_gen_f_loss: 2.5959 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6168 | total_cycle_loss: 1.3802: 0%|          | 1/440 [00:04<34:58, 4.78s/it]
```

```
total_gen_g_loss: 2.5214 | total_gen_f_loss: 2.5964 | disc_x_loss: 0.6058 | disc_Y_loss: 0.6166 | total_cycle
_loss: 1.3807: 12%|██████| 51/440 [00:17<01:40, 3.85it/s]

total_gen_g_loss: 2.5224 | total_gen_f_loss: 2.5966 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6164 | total_cycle
_loss: 1.3811: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.5234 | total_gen_f_loss: 2.5969 | disc_x_loss: 0.6059 | disc_Y_loss: 0.6161 | total_cycle
_loss: 1.3815: 34%|██████| 151/440 [00:43<01:14, 3.85it/s]

total_gen_g_loss: 2.5240 | total_gen_f_loss: 2.5969 | disc_x_loss: 0.6058 | disc_Y_loss: 0.6160 | total_cycle
_loss: 1.3816: 46%|██████| 201/440 [00:56<01:02, 3.82it/s]

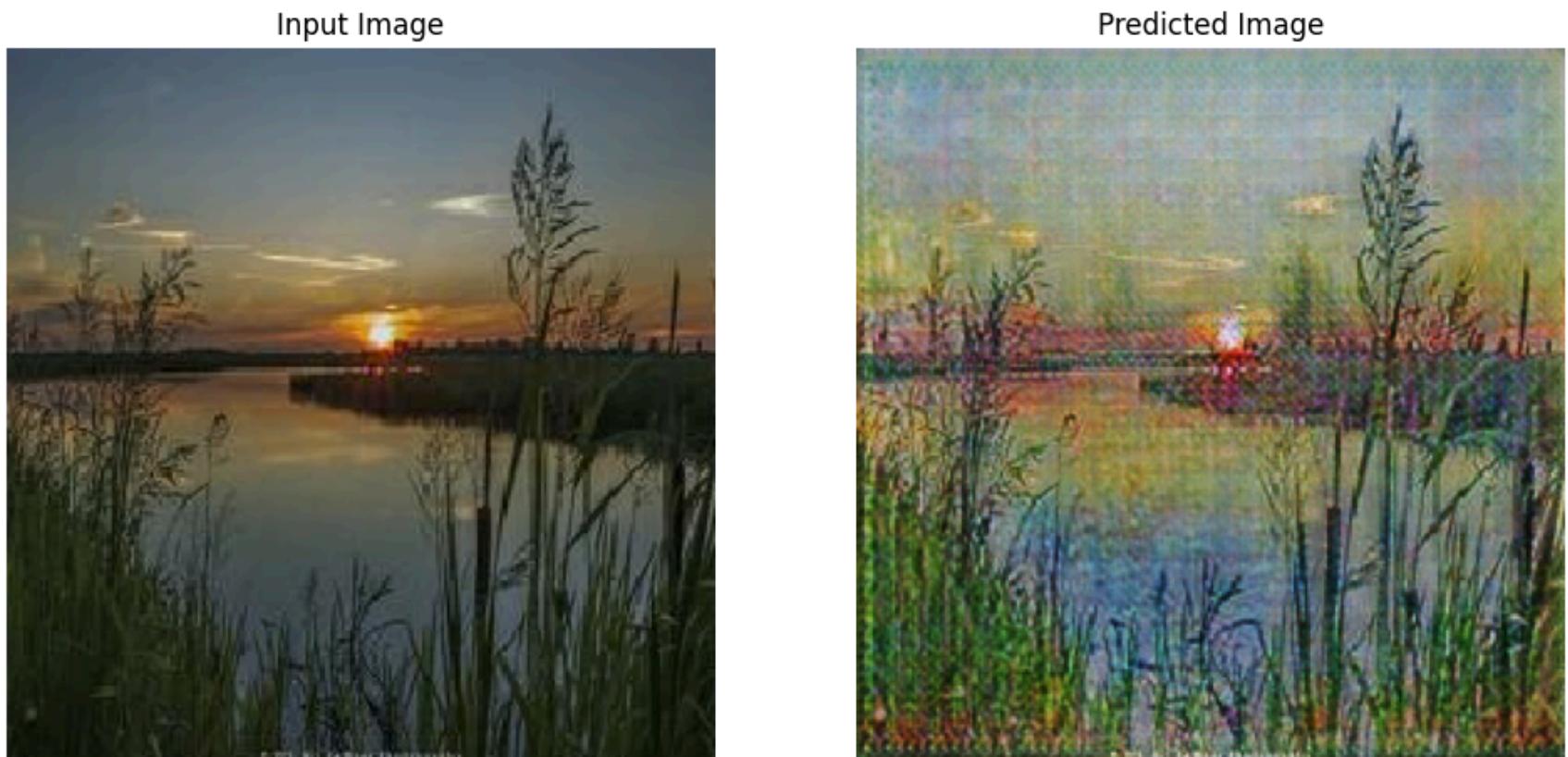
total_gen_g_loss: 2.5244 | total_gen_f_loss: 2.5968 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6159 | total_cycle
_loss: 1.3817: 57%|██████| 251/440 [01:09<00:48, 3.86it/s]

total_gen_g_loss: 2.5243 | total_gen_f_loss: 2.5961 | disc_x_loss: 0.6061 | disc_Y_loss: 0.6159 | total_cycle
_loss: 1.3815: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.5241 | total_gen_f_loss: 2.5954 | disc_x_loss: 0.6059 | disc_Y_loss: 0.6158 | total_cycle
_loss: 1.3809: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

total_gen_g_loss: 2.5237 | total_gen_f_loss: 2.5946 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6157 | total_cycle
_loss: 1.3806: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.5239 | total_gen_f_loss: 2.5943 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6156 | total_cycle
_loss: 1.3804: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```



```
total_gen_g_loss: 2.5239 | total_gen_f_loss: 2.5944 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6156 | total_cycle_loss: 1.3805:  0%|          | 1/440 [00:04<35:47,  4.89s/it]
```

```
total_gen_g_loss: 2.5247 | total_gen_f_loss: 2.5946 | disc_x_loss: 0.6060 | disc_Y_loss: 0.6155 | total_cycle_loss: 1.3806:  12%|█       | 51/440 [00:17<01:41,  3.85it/s]
```

```
total_gen_g_loss: 2.5257 | total_gen_f_loss: 2.5956 | disc_x_loss: 0.6058 | disc_Y_loss: 0.6153 | total_cycle_loss: 1.3812:  23%|██      | 101/440 [00:30<01:28,  3.83it/s]
```

```
total_gen_g_loss: 2.5262 | total_gen_f_loss: 2.5964 | disc_x_loss: 0.6055 | disc_Y_loss: 0.6151 | total_cycle_loss: 1.3815:  34%|███     | 151/440 [00:43<01:15,  3.85it/s]
```

```
total_gen_g_loss: 2.5267 | total_gen_f_loss: 2.5966 | disc_x_loss: 0.6056 | disc_Y_loss: 0.6151 | total_cycle_loss: 1.3818:  46%|████    | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.5272 | total_gen_f_loss: 2.5967 | disc_x_loss: 0.6055 | disc_Y_loss: 0.6149 | total_cycle_loss: 1.3821:  57%|█████   | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.5281 | total_gen_f_loss: 2.5973 | disc_x_loss: 0.6054 | disc_Y_loss: 0.6147 | total_cycle_loss: 1.3826: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]
```

```
total_gen_g_loss: 2.5283 | total_gen_f_loss: 2.5969 | disc_x_loss: 0.6055 | disc_Y_loss: 0.6145 | total_cycle_loss: 1.3823: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]
```

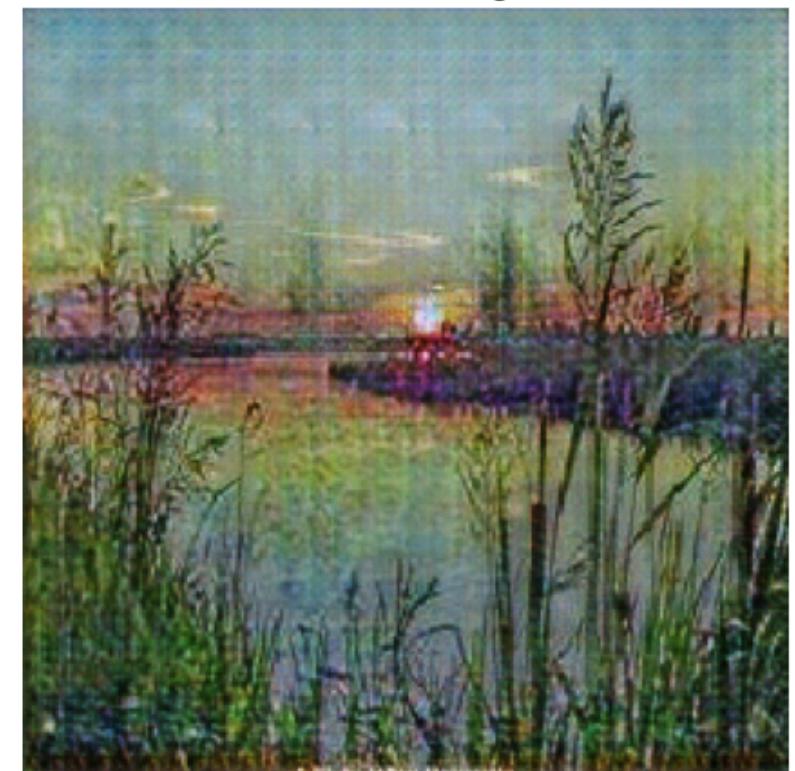
```
total_gen_g_loss: 2.5288 | total_gen_f_loss: 2.5974 | disc_x_loss: 0.6056 | disc_Y_loss: 0.6144 | total_cycle_loss: 1.3826: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]
```

```
total_gen_g_loss: 2.5288 | total_gen_f_loss: 2.5971 | disc_x_loss: 0.6056 | disc_Y_loss: 0.6144 | total_cycle_loss: 1.3825: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5288 | total_gen_f_loss: 2.5972 | disc_x_loss: 0.6057 | disc_Y_loss: 0.6145 | total_cycle_loss: 1.3825: 0%|          | 1/440 [00:04<35:45, 4.89s/it]
```

```
total_gen_g_loss: 2.5291 | total_gen_f_loss: 2.5969 | disc_x_loss: 0.6058 | disc_Y_loss: 0.6143 | total_cycle_loss: 1.3826: 12%|█       | 51/440 [00:17<01:40, 3.87it/s]
```

```
total_gen_g_loss: 2.5294 | total_gen_f_loss: 2.5971 | disc_x_loss: 0.6057 | disc_Y_loss: 0.6143 | total_cycle
_loss: 1.3828: 23%|██████| 101/440 [00:30<01:27, 3.85it/s]

total_gen_g_loss: 2.5301 | total_gen_f_loss: 2.5975 | disc_x_loss: 0.6056 | disc_Y_loss: 0.6143 | total_cycle
_loss: 1.3832: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.5300 | total_gen_f_loss: 2.5975 | disc_x_loss: 0.6053 | disc_Y_loss: 0.6141 | total_cycle
_loss: 1.3830: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.5306 | total_gen_f_loss: 2.5982 | disc_x_loss: 0.6053 | disc_Y_loss: 0.6140 | total_cycle
_loss: 1.3833: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.5314 | total_gen_f_loss: 2.5981 | disc_x_loss: 0.6054 | disc_Y_loss: 0.6138 | total_cycle
_loss: 1.3834: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]

total_gen_g_loss: 2.5317 | total_gen_f_loss: 2.5979 | disc_x_loss: 0.6054 | disc_Y_loss: 0.6135 | total_cycle
_loss: 1.3833: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

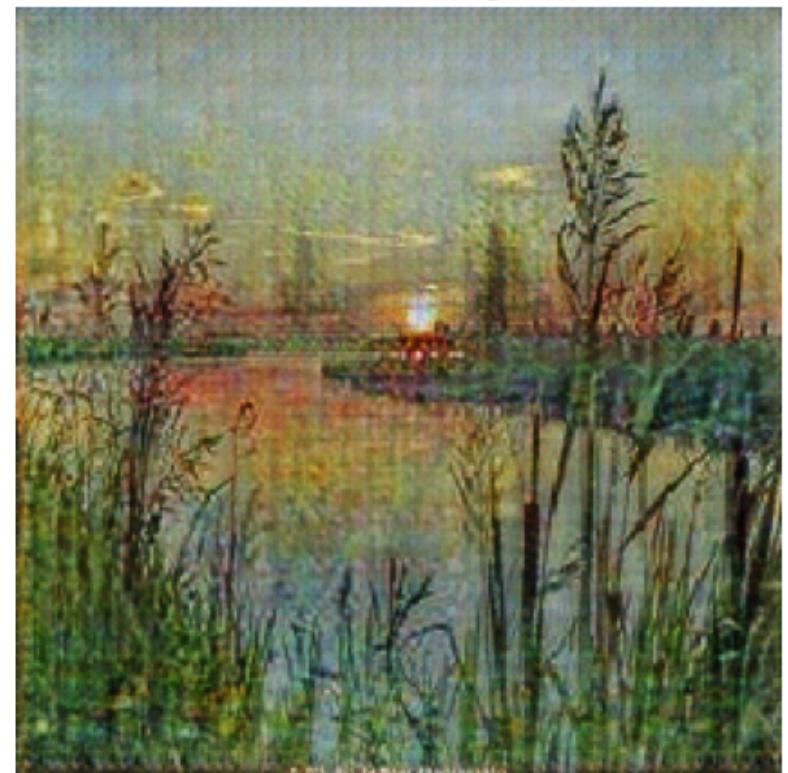
total_gen_g_loss: 2.5321 | total_gen_f_loss: 2.5977 | disc_x_loss: 0.6053 | disc_Y_loss: 0.6133 | total_cycle
_loss: 1.3834: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.5326 | total_gen_f_loss: 2.5982 | disc_x_loss: 0.6054 | disc_Y_loss: 0.6131 | total_cycle
_loss: 1.3837: 100%|████████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5326 | total_gen_f_loss: 2.5982 | disc_x_loss: 0.6054 | disc_Y_loss: 0.6132 | total_cycle_loss: 1.3837:  0%|          | 1/440 [00:04<35:51,  4.90s/it]
```

```
total_gen_g_loss: 2.5329 | total_gen_f_loss: 2.5984 | disc_x_loss: 0.6054 | disc_Y_loss: 0.6131 | total_cycle_loss: 1.3839:  12%|■         | 51/440 [00:17<01:40,  3.87it/s]
```

```
total_gen_g_loss: 2.5339 | total_gen_f_loss: 2.5988 | disc_x_loss: 0.6051 | disc_Y_loss: 0.6127 | total_cycle_loss: 1.3842:  23%|■         | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.5342 | total_gen_f_loss: 2.5986 | disc_x_loss: 0.6051 | disc_Y_loss: 0.6126 | total_cycle_loss: 1.3841:  34%|■         | 151/440 [00:43<01:15,  3.82it/s]
```

```
total_gen_g_loss: 2.5352 | total_gen_f_loss: 2.5993 | disc_x_loss: 0.6050 | disc_Y_loss: 0.6125 | total_cycle_loss: 1.3847:  46%|■         | 201/440 [00:56<01:02,  3.84it/s]
```

```
total_gen_g_loss: 2.5356 | total_gen_f_loss: 2.5992 | disc_x_loss: 0.6051 | disc_Y_loss: 0.6122 | total_cycle_loss: 1.3848:  57%|■         | 251/440 [01:09<00:49,  3.85it/s]
```

```
total_gen_g_loss: 2.5362 | total_gen_f_loss: 2.5998 | disc_x_loss: 0.6050 | disc_Y_loss: 0.6123 | total_cycle_loss: 1.3852: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.5370 | total_gen_f_loss: 2.6007 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6121 | total_cycle_loss: 1.3857: 80%|██████| 351/440 [01:35<00:23, 3.84it/s]
```

```
total_gen_g_loss: 2.5376 | total_gen_f_loss: 2.6012 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6119 | total_cycle_loss: 1.3861: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.5378 | total_gen_f_loss: 2.6012 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6117 | total_cycle_loss: 1.3860: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5378 | total_gen_f_loss: 2.6012 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6117 | total_cycle_loss: 1.3860: 0%|          | 1/440 [00:04<35:31, 4.86s/it]
```

```
total_gen_g_loss: 2.5383 | total_gen_f_loss: 2.6016 | disc_x_loss: 0.6047 | disc_Y_loss: 0.6116 | total_cycle_loss: 1.3863: 12%|█       | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.5392 | total_gen_f_loss: 2.6018 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6114 | total_cycle
_loss: 1.3865: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.5401 | total_gen_f_loss: 2.6020 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6111 | total_cycle
_loss: 1.3869: 34%|██████| 151/440 [00:43<01:14, 3.87it/s]

total_gen_g_loss: 2.5404 | total_gen_f_loss: 2.6023 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6113 | total_cycle
_loss: 1.3873: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

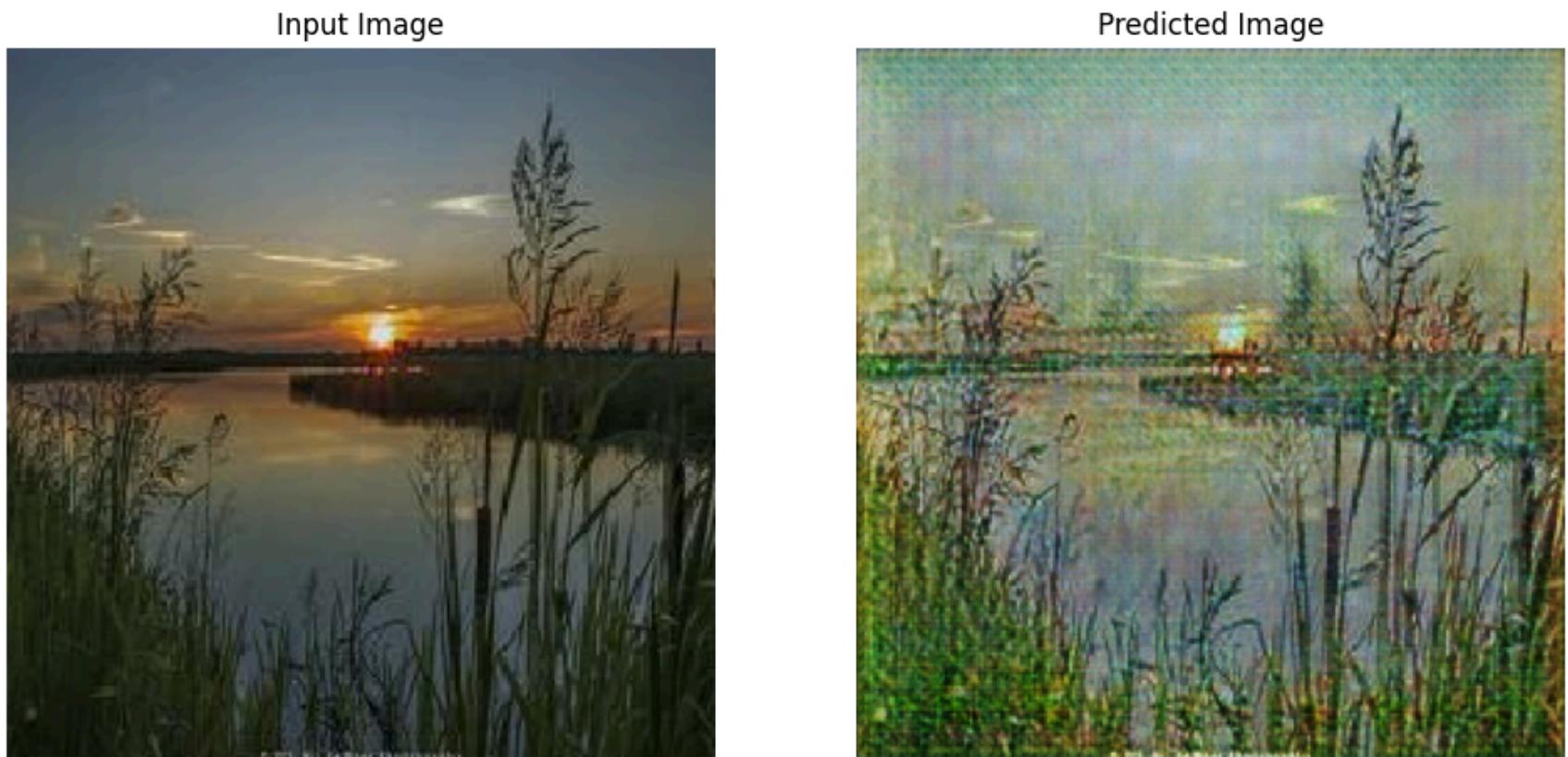
total_gen_g_loss: 2.5407 | total_gen_f_loss: 2.6023 | disc_x_loss: 0.6046 | disc_Y_loss: 0.6110 | total_cycle
_loss: 1.3871: 57%|██████| 251/440 [01:09<00:48, 3.87it/s]

total_gen_g_loss: 2.5409 | total_gen_f_loss: 2.6023 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6109 | total_cycle
_loss: 1.3872: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]

total_gen_g_loss: 2.5410 | total_gen_f_loss: 2.6016 | disc_x_loss: 0.6049 | disc_Y_loss: 0.6109 | total_cycle
_loss: 1.3870: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]

total_gen_g_loss: 2.5415 | total_gen_f_loss: 2.6017 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6109 | total_cycle
_loss: 1.3871: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.5420 | total_gen_f_loss: 2.6021 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6106 | total_cycle
_loss: 1.3874: 100%|████████| 440/440 [01:58<00:00, 3.71it/s]
```



```
total_gen_g_loss: 2.5421 | total_gen_f_loss: 2.6021 | disc_x_loss: 0.6048 | disc_Y_loss: 0.6107 | total_cycle_loss: 1.3874:  0%|          | 1/440 [00:04<35:50,  4.90s/it]
```

```
total_gen_g_loss: 2.5435 | total_gen_f_loss: 2.6025 | disc_x_loss: 0.6047 | disc_Y_loss: 0.6103 | total_cycle_loss: 1.3878:  12%|█       | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.5440 | total_gen_f_loss: 2.6028 | disc_x_loss: 0.6044 | disc_Y_loss: 0.6099 | total_cycle_loss: 1.3878:  23%|██      | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.5450 | total_gen_f_loss: 2.6037 | disc_x_loss: 0.6042 | disc_Y_loss: 0.6097 | total_cycle_loss: 1.3883:  34%|███     | 151/440 [00:43<01:14,  3.86it/s]
```

```
total_gen_g_loss: 2.5459 | total_gen_f_loss: 2.6037 | disc_x_loss: 0.6041 | disc_Y_loss: 0.6093 | total_cycle_loss: 1.3885:  46%|████    | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.5471 | total_gen_f_loss: 2.6038 | disc_x_loss: 0.6043 | disc_Y_loss: 0.6090 | total_cycle_loss: 1.3889:  57%|█████   | 251/440 [01:09<00:49,  3.85it/s]
```

```
total_gen_g_loss: 2.5482 | total_gen_f_loss: 2.6042 | disc_x_loss: 0.6044 | disc_Y_loss: 0.6090 | total_cycle_loss: 1.3892: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]
```

```
total_gen_g_loss: 2.5492 | total_gen_f_loss: 2.6045 | disc_x_loss: 0.6045 | disc_Y_loss: 0.6088 | total_cycle_loss: 1.3897: 80%|██████| 351/440 [01:35<00:23, 3.84it/s]
```

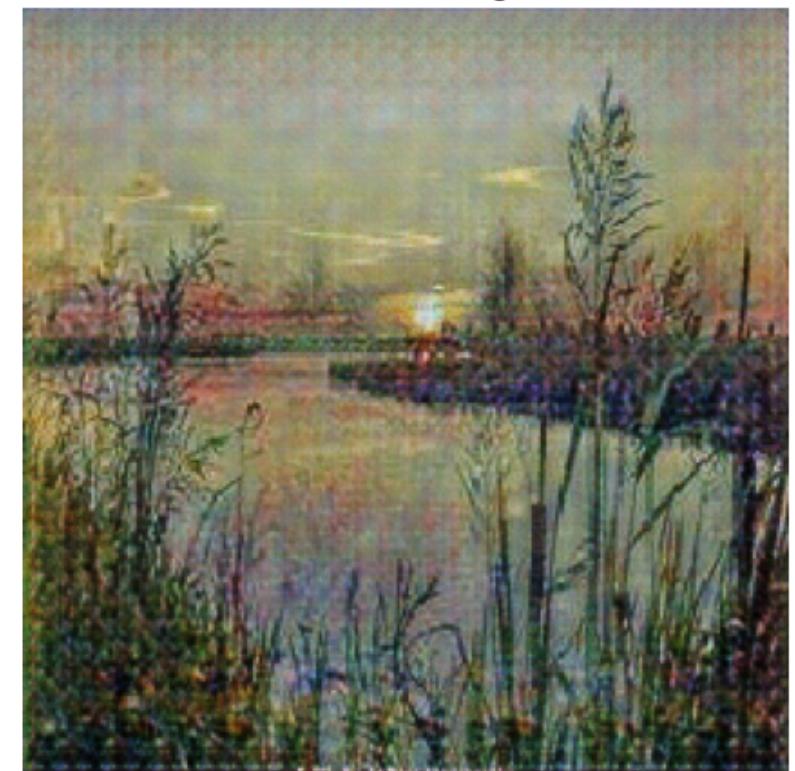
```
total_gen_g_loss: 2.5498 | total_gen_f_loss: 2.6047 | disc_x_loss: 0.6046 | disc_Y_loss: 0.6089 | total_cycle_loss: 1.3899: 91%|██████| 401/440 [01:48<00:10, 3.87it/s]
```

```
total_gen_g_loss: 2.5502 | total_gen_f_loss: 2.6049 | disc_x_loss: 0.6045 | disc_Y_loss: 0.6090 | total_cycle_loss: 1.3902: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5504 | total_gen_f_loss: 2.6050 | disc_x_loss: 0.6045 | disc_Y_loss: 0.6090 | total_cycle_loss: 1.3902: 0%|          | 1/440 [00:04<36:08, 4.94s/it]
```

```
total_gen_g_loss: 2.5512 | total_gen_f_loss: 2.6057 | disc_x_loss: 0.6044 | disc_Y_loss: 0.6087 | total_cycle_loss: 1.3908: 12%|█       | 51/440 [00:17<01:40, 3.87it/s]
```

```
total_gen_g_loss: 2.5515 | total_gen_f_loss: 2.6058 | disc_x_loss: 0.6042 | disc_Y_loss: 0.6085 | total_cycle_loss: 1.3909: 23%|██████| 101/440 [00:30<01:27, 3.87it/s]

total_gen_g_loss: 2.5522 | total_gen_f_loss: 2.6058 | disc_x_loss: 0.6042 | disc_Y_loss: 0.6084 | total_cycle_loss: 1.3909: 34%|██████| 151/440 [00:43<01:15, 3.85it/s]

total_gen_g_loss: 2.5524 | total_gen_f_loss: 2.6057 | disc_x_loss: 0.6043 | disc_Y_loss: 0.6083 | total_cycle_loss: 1.3910: 46%|██████| 201/440 [00:56<01:01, 3.86it/s]

total_gen_g_loss: 2.5524 | total_gen_f_loss: 2.6060 | disc_x_loss: 0.6042 | disc_Y_loss: 0.6084 | total_cycle_loss: 1.3910: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.5531 | total_gen_f_loss: 2.6061 | disc_x_loss: 0.6041 | disc_Y_loss: 0.6081 | total_cycle_loss: 1.3911: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]

total_gen_g_loss: 2.5540 | total_gen_f_loss: 2.6065 | disc_x_loss: 0.6041 | disc_Y_loss: 0.6079 | total_cycle_loss: 1.3915: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]

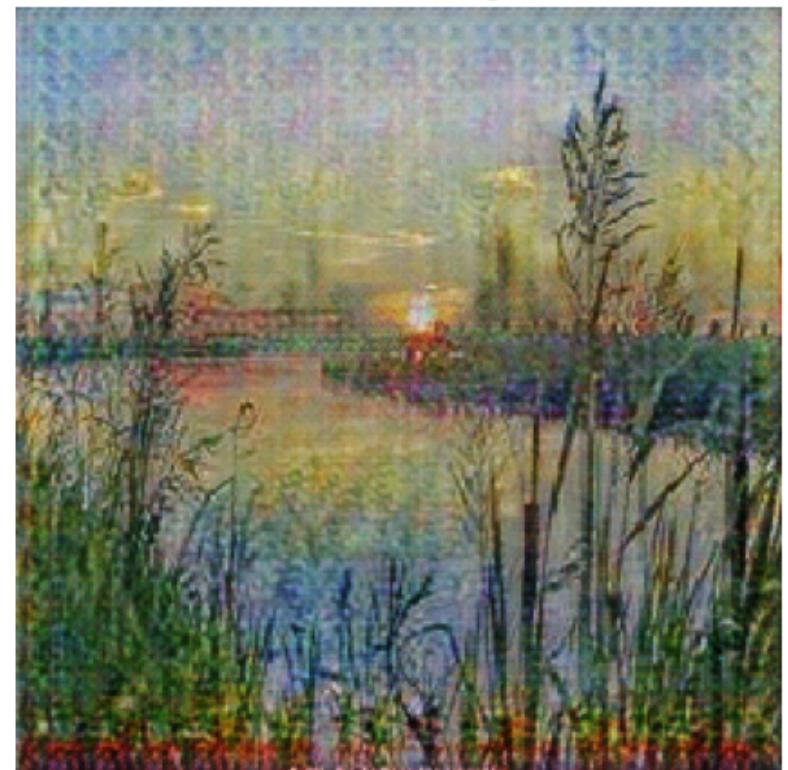
total_gen_g_loss: 2.5544 | total_gen_f_loss: 2.6069 | disc_x_loss: 0.6040 | disc_Y_loss: 0.6077 | total_cycle_loss: 1.3917: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.5549 | total_gen_f_loss: 2.6071 | disc_x_loss: 0.6041 | disc_Y_loss: 0.6077 | total_cycle_loss: 1.3918: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5548 | total_gen_f_loss: 2.6071 | disc_x_loss: 0.6041 | disc_Y_loss: 0.6077 | total_cycle_loss: 1.3918:  0%|          | 1/440 [00:04<35:06,  4.80s/it]
```

```
total_gen_g_loss: 2.5556 | total_gen_f_loss: 2.6073 | disc_x_loss: 0.6041 | disc_Y_loss: 0.6074 | total_cycle_loss: 1.3920:  12%|■         | 51/440 [00:17<01:40,  3.85it/s]
```

```
total_gen_g_loss: 2.5561 | total_gen_f_loss: 2.6076 | disc_x_loss: 0.6039 | disc_Y_loss: 0.6075 | total_cycle_loss: 1.3922:  23%|■         | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.5563 | total_gen_f_loss: 2.6077 | disc_x_loss: 0.6040 | disc_Y_loss: 0.6073 | total_cycle_loss: 1.3922:  34%|■         | 151/440 [00:43<01:14,  3.87it/s]
```

```
total_gen_g_loss: 2.5569 | total_gen_f_loss: 2.6076 | disc_x_loss: 0.6041 | disc_Y_loss: 0.6072 | total_cycle_loss: 1.3923:  46%|■         | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.5573 | total_gen_f_loss: 2.6081 | disc_x_loss: 0.6039 | disc_Y_loss: 0.6070 | total_cycle_loss: 1.3926:  57%|■         | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.5580 | total_gen_f_loss: 2.6082 | disc_x_loss: 0.6040 | disc_Y_loss: 0.6069 | total_cycle_loss: 1.3929: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.5587 | total_gen_f_loss: 2.6090 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6067 | total_cycle_loss: 1.3933: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

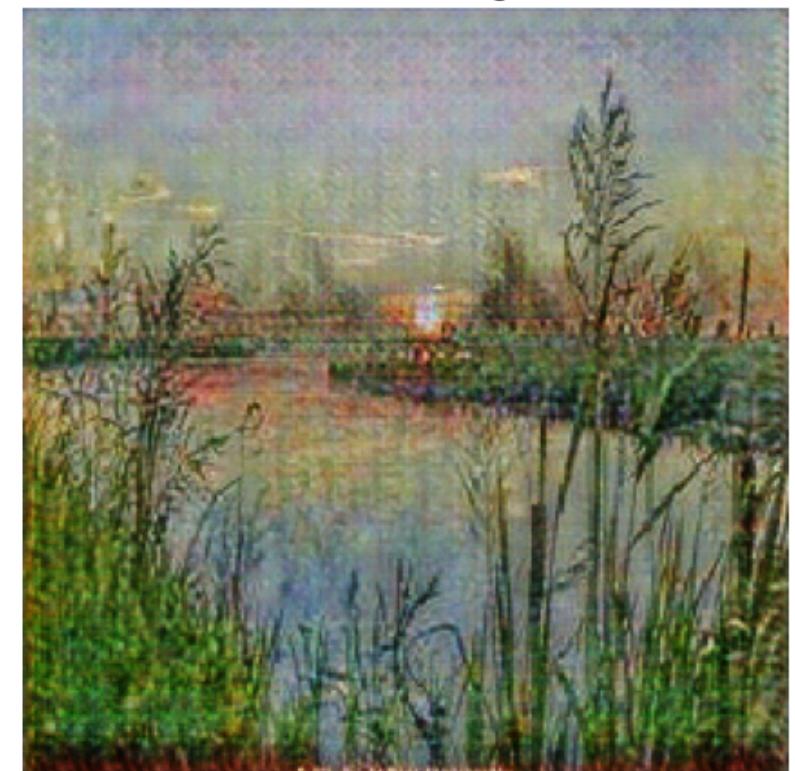
```
total_gen_g_loss: 2.5590 | total_gen_f_loss: 2.6091 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6066 | total_cycle_loss: 1.3935: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.5591 | total_gen_f_loss: 2.6091 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6066 | total_cycle_loss: 1.3936: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5592 | total_gen_f_loss: 2.6090 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6066 | total_cycle_loss: 1.3936: 0%|          | 1/440 [00:04<35:22, 4.83s/it]
```

```
total_gen_g_loss: 2.5589 | total_gen_f_loss: 2.6086 | disc_x_loss: 0.6038 | disc_Y_loss: 0.6066 | total_cycle_loss: 1.3934: 12%|█       | 51/440 [00:17<01:41, 3.84it/s]
```

```
total_gen_g_loss: 2.5595 | total_gen_f_loss: 2.6090 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6065 | total_cycle_loss: 1.3937: 23%|██████| 101/440 [00:30<01:27, 3.85it/s]

total_gen_g_loss: 2.5597 | total_gen_f_loss: 2.6089 | disc_x_loss: 0.6038 | disc_Y_loss: 0.6066 | total_cycle_loss: 1.3937: 34%|██████| 151/440 [00:43<01:14, 3.87it/s]

total_gen_g_loss: 2.5609 | total_gen_f_loss: 2.6097 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6063 | total_cycle_loss: 1.3943: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

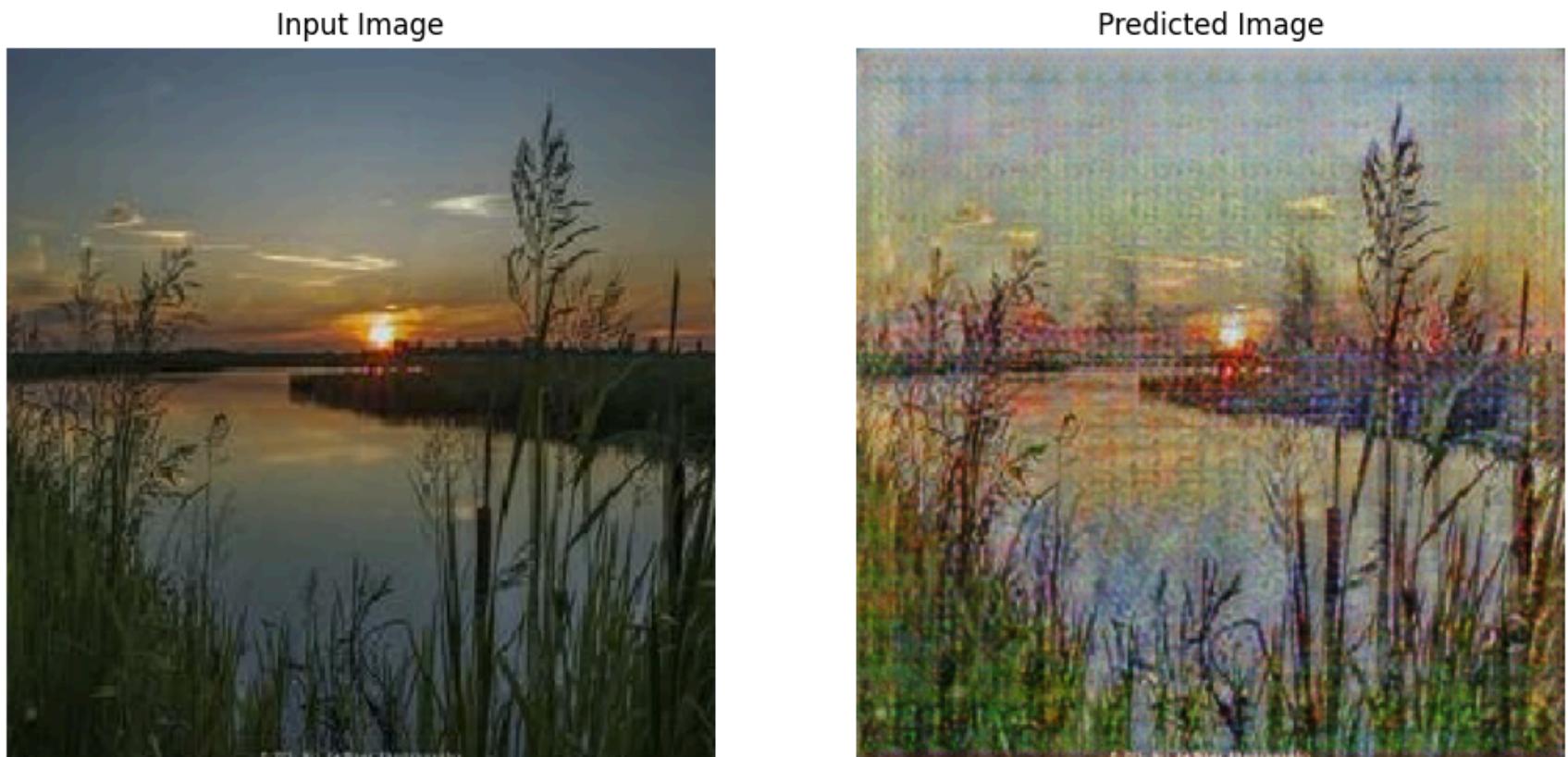
total_gen_g_loss: 2.5612 | total_gen_f_loss: 2.6097 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6062 | total_cycle_loss: 1.3945: 57%|██████| 251/440 [01:09<00:49, 3.86it/s]

total_gen_g_loss: 2.5613 | total_gen_f_loss: 2.6095 | disc_x_loss: 0.6038 | disc_Y_loss: 0.6063 | total_cycle_loss: 1.3946: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]

total_gen_g_loss: 2.5614 | total_gen_f_loss: 2.6093 | disc_x_loss: 0.6037 | disc_Y_loss: 0.6062 | total_cycle_loss: 1.3944: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

total_gen_g_loss: 2.5614 | total_gen_f_loss: 2.6088 | disc_x_loss: 0.6038 | disc_Y_loss: 0.6061 | total_cycle_loss: 1.3942: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.5621 | total_gen_f_loss: 2.6090 | disc_x_loss: 0.6036 | disc_Y_loss: 0.6057 | total_cycle_loss: 1.3943: 100%|████████| 440/440 [01:58<00:00, 3.71it/s]
```



```
total_gen_g_loss: 2.5621 | total_gen_f_loss: 2.6090 | disc_x_loss: 0.6036 | disc_Y_loss: 0.6057 | total_cycle_loss: 1.3943:  0%|          | 1/440 [00:04<35:23,  4.84s/it]
```

```
total_gen_g_loss: 2.5626 | total_gen_f_loss: 2.6090 | disc_x_loss: 0.6036 | disc_Y_loss: 0.6056 | total_cycle_loss: 1.3944:  12%|█       | 51/440 [00:17<01:41,  3.84it/s]
```

```
total_gen_g_loss: 2.5634 | total_gen_f_loss: 2.6095 | disc_x_loss: 0.6035 | disc_Y_loss: 0.6053 | total_cycle_loss: 1.3948:  23%|██      | 101/440 [00:30<01:27,  3.87it/s]
```

```
total_gen_g_loss: 2.5640 | total_gen_f_loss: 2.6099 | disc_x_loss: 0.6035 | disc_Y_loss: 0.6051 | total_cycle_loss: 1.3951:  34%|███     | 151/440 [00:43<01:14,  3.86it/s]
```

```
total_gen_g_loss: 2.5643 | total_gen_f_loss: 2.6098 | disc_x_loss: 0.6034 | disc_Y_loss: 0.6050 | total_cycle_loss: 1.3951:  46%|████    | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.5646 | total_gen_f_loss: 2.6099 | disc_x_loss: 0.6033 | disc_Y_loss: 0.6049 | total_cycle_loss: 1.3951:  57%|█████   | 251/440 [01:09<00:48,  3.87it/s]
```

```
total_gen_g_loss: 2.5653 | total_gen_f_loss: 2.6104 | disc_x_loss: 0.6032 | disc_Y_loss: 0.6048 | total_cycle_loss: 1.3954: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.5657 | total_gen_f_loss: 2.6107 | disc_x_loss: 0.6033 | disc_Y_loss: 0.6046 | total_cycle_loss: 1.3957: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]

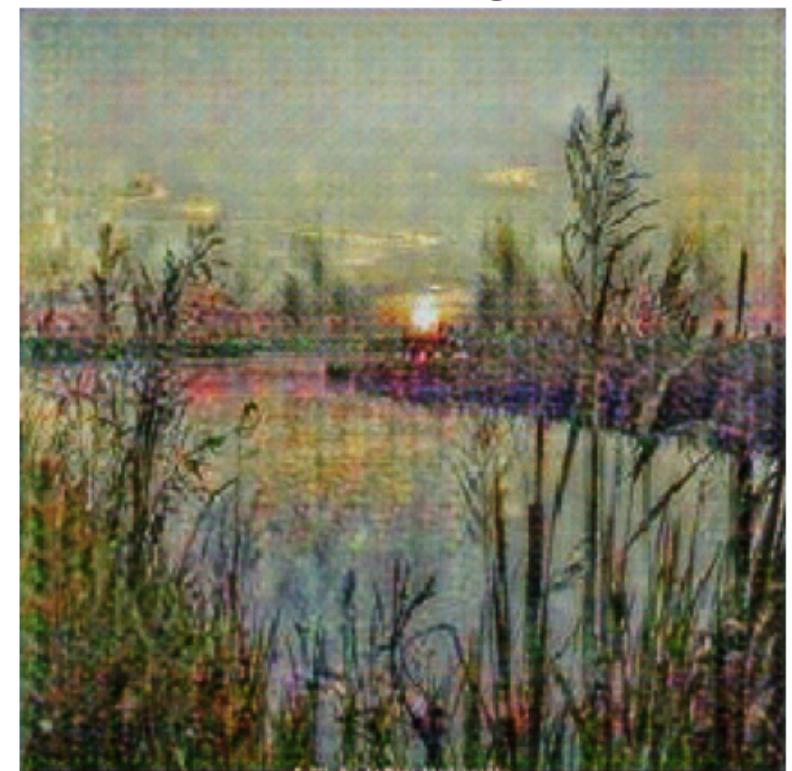
total_gen_g_loss: 2.5659 | total_gen_f_loss: 2.6106 | disc_x_loss: 0.6034 | disc_Y_loss: 0.6045 | total_cycle_loss: 1.3956: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.5664 | total_gen_f_loss: 2.6107 | disc_x_loss: 0.6033 | disc_Y_loss: 0.6045 | total_cycle_loss: 1.3958: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



Saving checkpoint for epoch 30 at /kaggle/working/checkpoints/train/ckpt-5  
Time taken for epoch 30 is 121.95693016052246 sec

```
total_gen_g_loss: 2.5664 | total_gen_f_loss: 2.6107 | disc_x_loss: 0.6033 | disc_Y_loss: 0.6045 | total_cycle_loss: 1.3958: 0%|          | 1/440 [00:04<35:56, 4.91s/it]
```

```
total_gen_g_loss: 2.5667 | total_gen_f_loss: 2.6110 | disc_x_loss: 0.6033 | disc_Y_loss: 0.6044 | total_cycle
_loss: 1.3960: 12%|███████| 51/440 [00:17<01:41, 3.84it/s]

total_gen_g_loss: 2.5677 | total_gen_f_loss: 2.6117 | disc_x_loss: 0.6031 | disc_Y_loss: 0.6041 | total_cycle
_loss: 1.3963: 23%|███████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.5686 | total_gen_f_loss: 2.6122 | disc_x_loss: 0.6031 | disc_Y_loss: 0.6039 | total_cycle
_loss: 1.3967: 34%|███████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.5693 | total_gen_f_loss: 2.6126 | disc_x_loss: 0.6030 | disc_Y_loss: 0.6037 | total_cycle
_loss: 1.3970: 46%|███████| 201/440 [00:56<01:01, 3.87it/s]

total_gen_g_loss: 2.5693 | total_gen_f_loss: 2.6122 | disc_x_loss: 0.6031 | disc_Y_loss: 0.6037 | total_cycle
_loss: 1.3969: 57%|███████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.5703 | total_gen_f_loss: 2.6126 | disc_x_loss: 0.6031 | disc_Y_loss: 0.6036 | total_cycle
_loss: 1.3974: 68%|███████| 301/440 [01:22<00:36, 3.85it/s]

total_gen_g_loss: 2.5706 | total_gen_f_loss: 2.6128 | disc_x_loss: 0.6031 | disc_Y_loss: 0.6034 | total_cycle
_loss: 1.3975: 80%|███████| 351/440 [01:35<00:23, 3.86it/s]

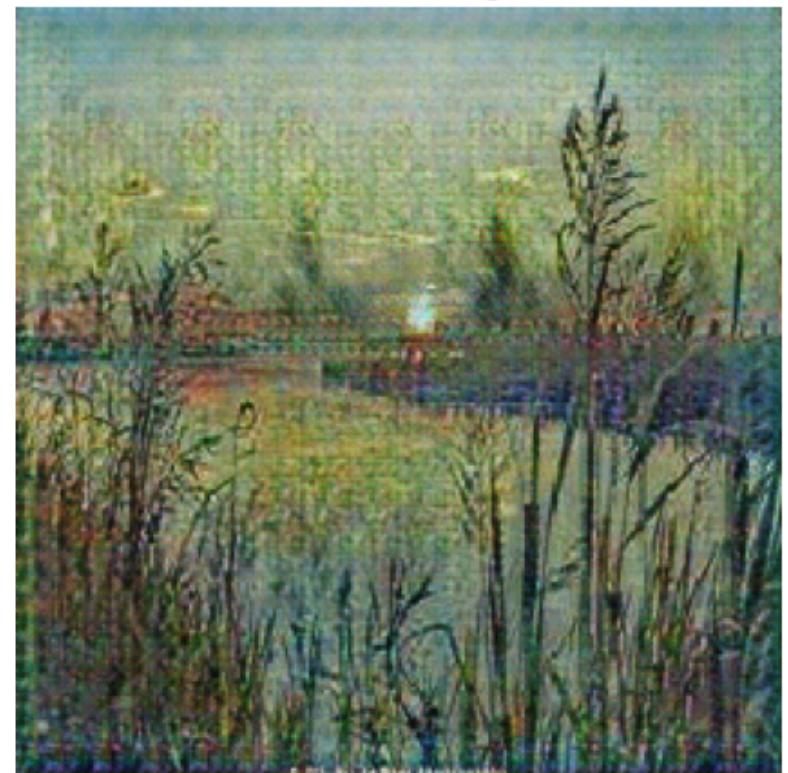
total_gen_g_loss: 2.5710 | total_gen_f_loss: 2.6131 | disc_x_loss: 0.6030 | disc_Y_loss: 0.6033 | total_cycle
_loss: 1.3977: 91%|███████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.5712 | total_gen_f_loss: 2.6134 | disc_x_loss: 0.6027 | disc_Y_loss: 0.6031 | total_cycle
_loss: 1.3976: 100%|███████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5712 | total_gen_f_loss: 2.6134 | disc_x_loss: 0.6027 | disc_Y_loss: 0.6031 | total_cycle_loss: 1.3976:  0%|          | 1/440 [00:04<35:11,  4.81s/it]
```

```
total_gen_g_loss: 2.5715 | total_gen_f_loss: 2.6136 | disc_x_loss: 0.6027 | disc_Y_loss: 0.6031 | total_cycle_loss: 1.3978:  12%|■         | 51/440 [00:17<01:41,  3.84it/s]
```

```
total_gen_g_loss: 2.5719 | total_gen_f_loss: 2.6137 | disc_x_loss: 0.6027 | disc_Y_loss: 0.6030 | total_cycle_loss: 1.3979:  23%|■         | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.5726 | total_gen_f_loss: 2.6141 | disc_x_loss: 0.6025 | disc_Y_loss: 0.6029 | total_cycle_loss: 1.3981:  34%|■         | 151/440 [00:43<01:14,  3.87it/s]
```

```
total_gen_g_loss: 2.5740 | total_gen_f_loss: 2.6154 | disc_x_loss: 0.6023 | disc_Y_loss: 0.6026 | total_cycle_loss: 1.3988:  46%|■         | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.5745 | total_gen_f_loss: 2.6157 | disc_x_loss: 0.6025 | disc_Y_loss: 0.6026 | total_cycle_loss: 1.3990:  57%|■         | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.5754 | total_gen_f_loss: 2.6160 | disc_x_loss: 0.6026 | disc_Y_loss: 0.6025 | total_cycle_loss: 1.3995: 68%|██████| 301/440 [01:22<00:36, 3.85it/s]
```

```
total_gen_g_loss: 2.5760 | total_gen_f_loss: 2.6162 | disc_x_loss: 0.6024 | disc_Y_loss: 0.6022 | total_cycle_loss: 1.3995: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

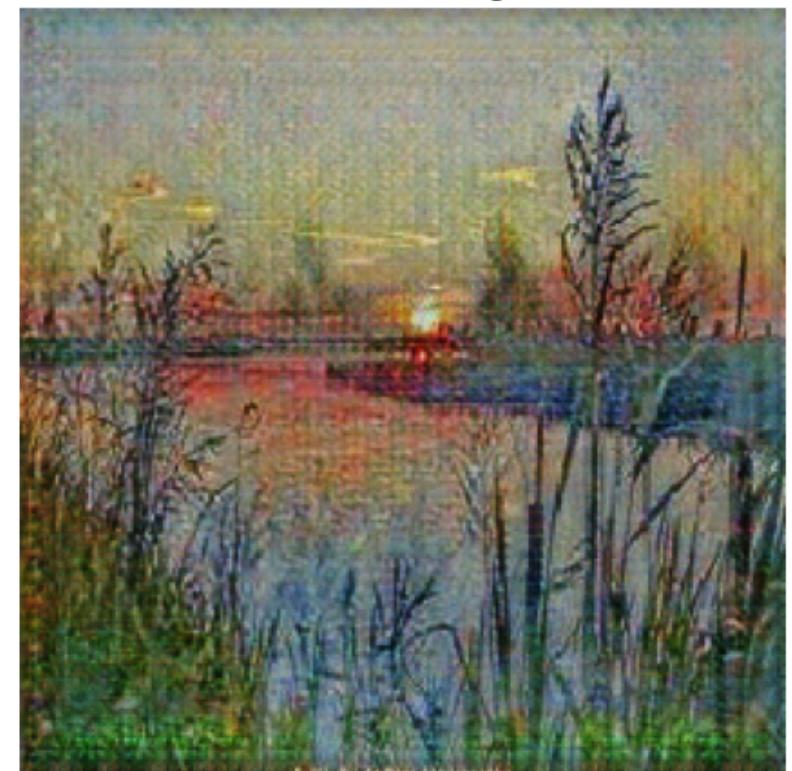
```
total_gen_g_loss: 2.5767 | total_gen_f_loss: 2.6166 | disc_x_loss: 0.6023 | disc_Y_loss: 0.6021 | total_cycle_loss: 1.3999: 91%|██████| 401/440 [01:48<00:10, 3.87it/s]
```

```
total_gen_g_loss: 2.5772 | total_gen_f_loss: 2.6166 | disc_x_loss: 0.6024 | disc_Y_loss: 0.6019 | total_cycle_loss: 1.4000: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5772 | total_gen_f_loss: 2.6166 | disc_x_loss: 0.6024 | disc_Y_loss: 0.6020 | total_cycle_loss: 1.4000: 0% | 1/440 [00:04<34:53, 4.77s/it]
```

```
total_gen_g_loss: 2.5779 | total_gen_f_loss: 2.6172 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6018 | total_cycle_loss: 1.4003: 12%|█ | 51/440 [00:17<01:41, 3.84it/s]
```

```
total_gen_g_loss: 2.5782 | total_gen_f_loss: 2.6172 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6017 | total_cycle_loss: 1.4005: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.5787 | total_gen_f_loss: 2.6175 | disc_x_loss: 0.6023 | disc_Y_loss: 0.6017 | total_cycle_loss: 1.4008: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.5792 | total_gen_f_loss: 2.6180 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6017 | total_cycle_loss: 1.4011: 46%|██████| 201/440 [00:56<01:01, 3.86it/s]

total_gen_g_loss: 2.5799 | total_gen_f_loss: 2.6183 | disc_x_loss: 0.6021 | disc_Y_loss: 0.6015 | total_cycle_loss: 1.4013: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.5801 | total_gen_f_loss: 2.6187 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6014 | total_cycle_loss: 1.4015: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]

total_gen_g_loss: 2.5804 | total_gen_f_loss: 2.6186 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6014 | total_cycle_loss: 1.4017: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]

total_gen_g_loss: 2.5808 | total_gen_f_loss: 2.6190 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6012 | total_cycle_loss: 1.4019: 91%|██████| 401/440 [01:48<00:10, 3.84it/s]

total_gen_g_loss: 2.5812 | total_gen_f_loss: 2.6192 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6012 | total_cycle_loss: 1.4021: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5812 | total_gen_f_loss: 2.6192 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6011 | total_cycle_loss: 1.4021:  0%|          | 1/440 [00:04<35:20,  4.83s/it]
```

```
total_gen_g_loss: 2.5817 | total_gen_f_loss: 2.6192 | disc_x_loss: 0.6022 | disc_Y_loss: 0.6010 | total_cycle_loss: 1.4022:  12%|■         | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.5820 | total_gen_f_loss: 2.6189 | disc_x_loss: 0.6021 | disc_Y_loss: 0.6008 | total_cycle_loss: 1.4021:  23%|■         | 101/440 [00:30<01:30,  3.74it/s]
```

```
total_gen_g_loss: 2.5826 | total_gen_f_loss: 2.6191 | disc_x_loss: 0.6020 | disc_Y_loss: 0.6006 | total_cycle_loss: 1.4022:  34%|■         | 151/440 [00:43<01:15,  3.85it/s]
```

```
total_gen_g_loss: 2.5832 | total_gen_f_loss: 2.6196 | disc_x_loss: 0.6018 | disc_Y_loss: 0.6005 | total_cycle_loss: 1.4024:  46%|■         | 201/440 [00:56<01:02,  3.84it/s]
```

```
total_gen_g_loss: 2.5838 | total_gen_f_loss: 2.6199 | disc_x_loss: 0.6020 | disc_Y_loss: 0.6004 | total_cycle_loss: 1.4028:  57%|■         | 251/440 [01:09<00:49,  3.85it/s]
```

```
total_gen_g_loss: 2.5845 | total_gen_f_loss: 2.6201 | disc_x_loss: 0.6020 | disc_Y_loss: 0.6003 | total_cycle_loss: 1.4030: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.5852 | total_gen_f_loss: 2.6209 | disc_x_loss: 0.6018 | disc_Y_loss: 0.6001 | total_cycle_loss: 1.4035: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]
```

```
total_gen_g_loss: 2.5859 | total_gen_f_loss: 2.6215 | disc_x_loss: 0.6019 | disc_Y_loss: 0.6000 | total_cycle_loss: 1.4039: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.5865 | total_gen_f_loss: 2.6219 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5998 | total_cycle_loss: 1.4041: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5865 | total_gen_f_loss: 2.6219 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5998 | total_cycle_loss: 1.4041: 0%|          | 1/440 [00:05<37:28, 5.12s/it]
```

```
total_gen_g_loss: 2.5871 | total_gen_f_loss: 2.6222 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5998 | total_cycle_loss: 1.4044: 12%|█       | 51/440 [00:18<01:41, 3.85it/s]
```

```
total_gen_g_loss: 2.5880 | total_gen_f_loss: 2.6229 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5996 | total_cycle
_loss: 1.4048: 23%|██████| 101/440 [00:31<01:28, 3.85it/s]

total_gen_g_loss: 2.5889 | total_gen_f_loss: 2.6232 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5995 | total_cycle
_loss: 1.4052: 34%|██████| 151/440 [00:44<01:14, 3.87it/s]

total_gen_g_loss: 2.5894 | total_gen_f_loss: 2.6239 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5994 | total_cycle
_loss: 1.4055: 46%|██████| 201/440 [00:57<01:01, 3.86it/s]

total_gen_g_loss: 2.5901 | total_gen_f_loss: 2.6243 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5992 | total_cycle
_loss: 1.4059: 57%|██████| 251/440 [01:10<00:48, 3.86it/s]

total_gen_g_loss: 2.5907 | total_gen_f_loss: 2.6245 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5991 | total_cycle
_loss: 1.4062: 68%|██████| 301/440 [01:22<00:35, 3.87it/s]

total_gen_g_loss: 2.5910 | total_gen_f_loss: 2.6246 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5991 | total_cycle
_loss: 1.4063: 80%|██████| 351/440 [01:35<00:23, 3.87it/s]

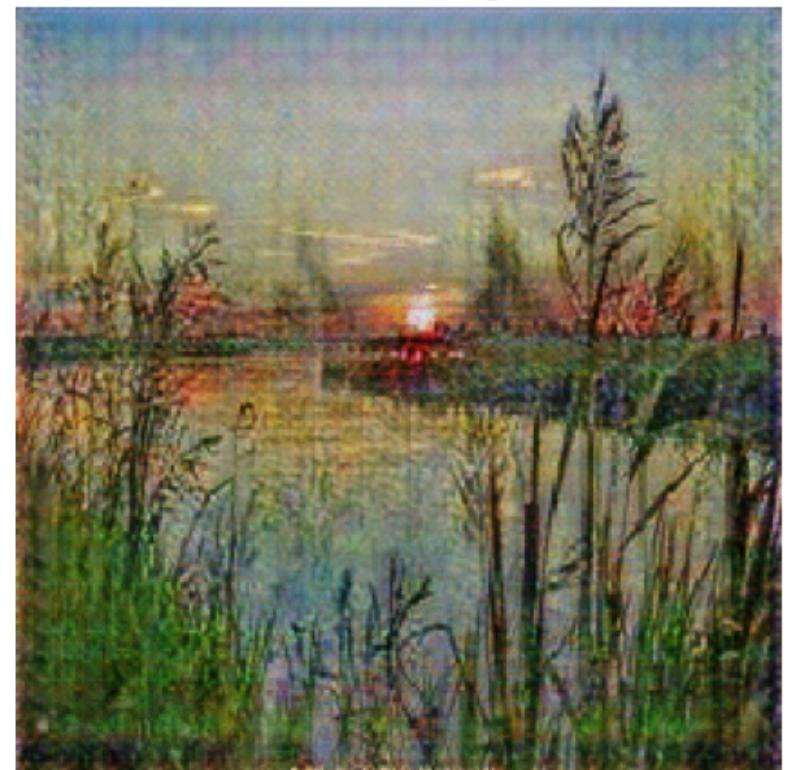
total_gen_g_loss: 2.5915 | total_gen_f_loss: 2.6246 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5989 | total_cycle
_loss: 1.4065: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.5921 | total_gen_f_loss: 2.6249 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5989 | total_cycle
_loss: 1.4067: 100%|██████| 440/440 [01:59<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5921 | total_gen_f_loss: 2.6249 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5989 | total_cycle_loss: 1.4067:  0%|          | 1/440 [00:04<35:14,  4.82s/it]
```

```
total_gen_g_loss: 2.5922 | total_gen_f_loss: 2.6248 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5988 | total_cycle_loss: 1.4067:  12%|■         | 51/440 [00:17<01:40,  3.87it/s]
```

```
total_gen_g_loss: 2.5924 | total_gen_f_loss: 2.6249 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5988 | total_cycle_loss: 1.4068:  23%|■         | 101/440 [00:30<01:27,  3.85it/s]
```

```
total_gen_g_loss: 2.5926 | total_gen_f_loss: 2.6249 | disc_x_loss: 0.6019 | disc_Y_loss: 0.5987 | total_cycle_loss: 1.4069:  34%|■         | 151/440 [00:43<01:14,  3.87it/s]
```

```
total_gen_g_loss: 2.5928 | total_gen_f_loss: 2.6250 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5986 | total_cycle_loss: 1.4070:  46%|■         | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.5932 | total_gen_f_loss: 2.6247 | disc_x_loss: 0.6019 | disc_Y_loss: 0.5984 | total_cycle_loss: 1.4069:  57%|■         | 251/440 [01:09<00:49,  3.85it/s]
```

```
total_gen_g_loss: 2.5942 | total_gen_f_loss: 2.6250 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5981 | total_cycle_loss: 1.4073: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.5949 | total_gen_f_loss: 2.6252 | disc_x_loss: 0.6019 | disc_Y_loss: 0.5979 | total_cycle_loss: 1.4076: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]
```

```
total_gen_g_loss: 2.5955 | total_gen_f_loss: 2.6254 | disc_x_loss: 0.6019 | disc_Y_loss: 0.5979 | total_cycle_loss: 1.4078: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.5960 | total_gen_f_loss: 2.6257 | disc_x_loss: 0.6019 | disc_Y_loss: 0.5978 | total_cycle_loss: 1.4081: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.5960 | total_gen_f_loss: 2.6257 | disc_x_loss: 0.6019 | disc_Y_loss: 0.5978 | total_cycle_loss: 1.4081: 0%|          | 1/440 [00:04<35:00, 4.78s/it]
```

```
total_gen_g_loss: 2.5966 | total_gen_f_loss: 2.6260 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5977 | total_cycle_loss: 1.4083: 12%|█       | 51/440 [00:17<01:41, 3.84it/s]
```

```
total_gen_g_loss: 2.5970 | total_gen_f_loss: 2.6261 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5976 | total_cycle
_loss: 1.4085: 23%|██████| 101/440 [00:30<01:28, 3.84it/s]

total_gen_g_loss: 2.5977 | total_gen_f_loss: 2.6264 | disc_x_loss: 0.6019 | disc_Y_loss: 0.5975 | total_cycle
_loss: 1.4089: 34%|██████| 151/440 [00:43<01:15, 3.84it/s]

total_gen_g_loss: 2.5985 | total_gen_f_loss: 2.6268 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5972 | total_cycle
_loss: 1.4093: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.5991 | total_gen_f_loss: 2.6268 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5969 | total_cycle
_loss: 1.4093: 57%|██████| 251/440 [01:09<00:49, 3.85it/s]

total_gen_g_loss: 2.5996 | total_gen_f_loss: 2.6269 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5968 | total_cycle
_loss: 1.4094: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]

total_gen_g_loss: 2.6002 | total_gen_f_loss: 2.6272 | disc_x_loss: 0.6018 | disc_Y_loss: 0.5967 | total_cycle
_loss: 1.4097: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

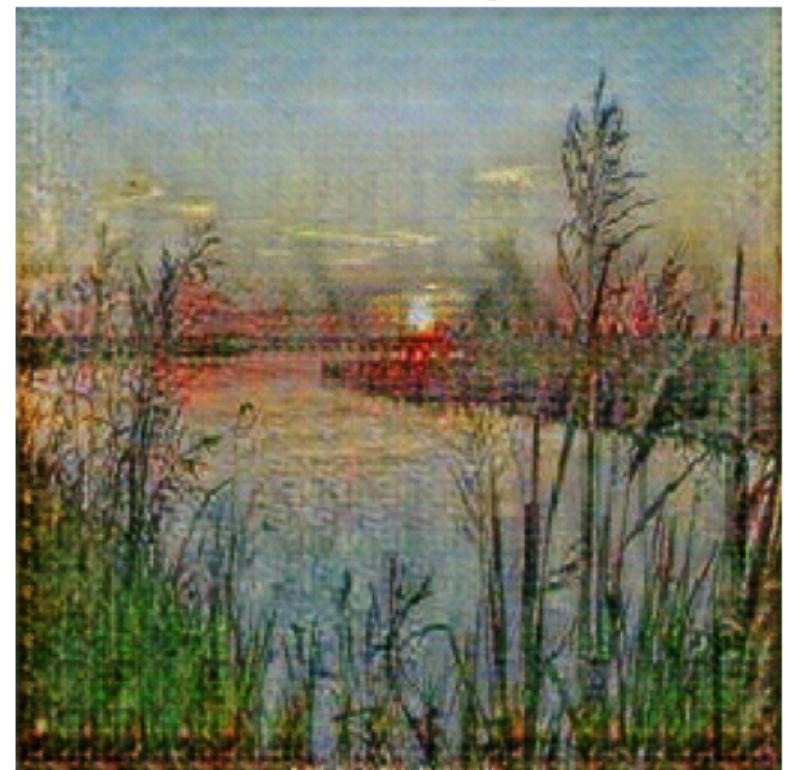
total_gen_g_loss: 2.6012 | total_gen_f_loss: 2.6283 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5967 | total_cycle
_loss: 1.4103: 91%|██████| 401/440 [01:48<00:10, 3.84it/s]

total_gen_g_loss: 2.6019 | total_gen_f_loss: 2.6289 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5967 | total_cycle
_loss: 1.4107: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6019 | total_gen_f_loss: 2.6289 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5967 | total_cycle_loss: 1.4107:  0%|          | 1/440 [00:04<35:13,  4.81s/it]
```

```
total_gen_g_loss: 2.6025 | total_gen_f_loss: 2.6294 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5967 | total_cycle_loss: 1.4110:  12%|■         | 51/440 [00:17<01:40,  3.85it/s]
```

```
total_gen_g_loss: 2.6031 | total_gen_f_loss: 2.6300 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5965 | total_cycle_loss: 1.4112:  23%|■         | 101/440 [00:30<01:28,  3.84it/s]
```

```
total_gen_g_loss: 2.6035 | total_gen_f_loss: 2.6302 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5964 | total_cycle_loss: 1.4115:  34%|■         | 151/440 [00:43<01:14,  3.86it/s]
```

```
total_gen_g_loss: 2.6042 | total_gen_f_loss: 2.6306 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5961 | total_cycle_loss: 1.4116:  46%|■         | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.6049 | total_gen_f_loss: 2.6310 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5958 | total_cycle_loss: 1.4118:  57%|■         | 251/440 [01:09<00:49,  3.84it/s]
```

```
total_gen_g_loss: 2.6055 | total_gen_f_loss: 2.6312 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5958 | total_cycle_loss: 1.4121: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]
```

```
total_gen_g_loss: 2.6057 | total_gen_f_loss: 2.6315 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5957 | total_cycle_loss: 1.4123: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

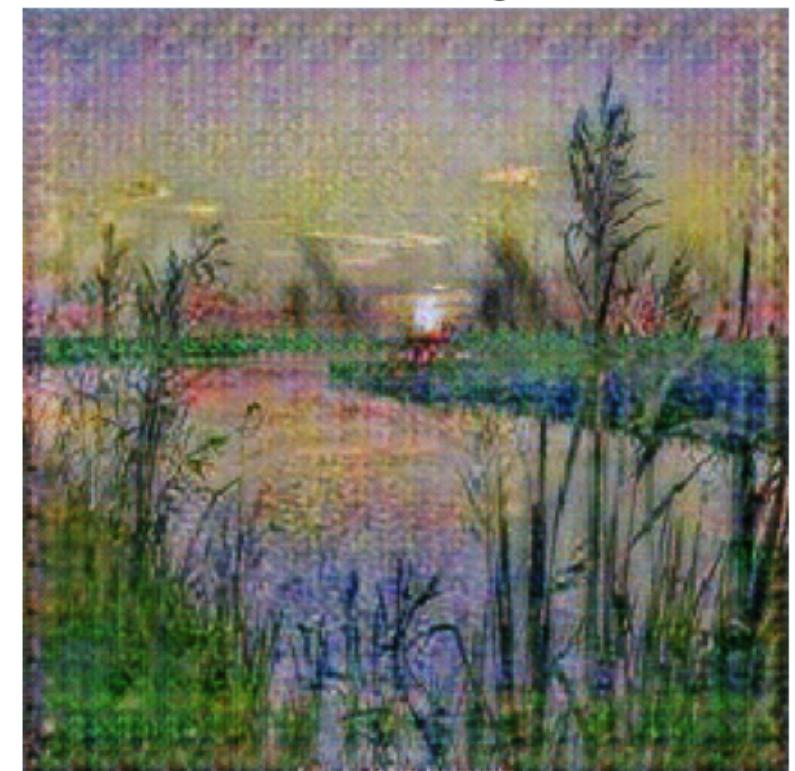
```
total_gen_g_loss: 2.6065 | total_gen_f_loss: 2.6321 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5955 | total_cycle_loss: 1.4125: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]
```

```
total_gen_g_loss: 2.6071 | total_gen_f_loss: 2.6321 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5954 | total_cycle_loss: 1.4128: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6071 | total_gen_f_loss: 2.6321 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5954 | total_cycle_loss: 1.4128: 0% | 1/440 [00:04<35:54, 4.91s/it]
```

```
total_gen_g_loss: 2.6079 | total_gen_f_loss: 2.6324 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5953 | total_cycle_loss: 1.4131: 12%|█ | 51/440 [00:17<01:41, 3.85it/s]
```

```
total_gen_g_loss: 2.6089 | total_gen_f_loss: 2.6327 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5950 | total_cycle_loss: 1.4134: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.6093 | total_gen_f_loss: 2.6330 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5949 | total_cycle_loss: 1.4136: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.6100 | total_gen_f_loss: 2.6333 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5947 | total_cycle_loss: 1.4138: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.6106 | total_gen_f_loss: 2.6336 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5945 | total_cycle_loss: 1.4140: 57%|██████| 251/440 [01:09<00:48, 3.86it/s]

total_gen_g_loss: 2.6112 | total_gen_f_loss: 2.6340 | disc_x_loss: 0.6009 | disc_Y_loss: 0.5945 | total_cycle_loss: 1.4141: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]

total_gen_g_loss: 2.6119 | total_gen_f_loss: 2.6342 | disc_x_loss: 0.6010 | disc_Y_loss: 0.5943 | total_cycle_loss: 1.4144: 80%|██████| 351/440 [01:35<00:23, 3.87it/s]

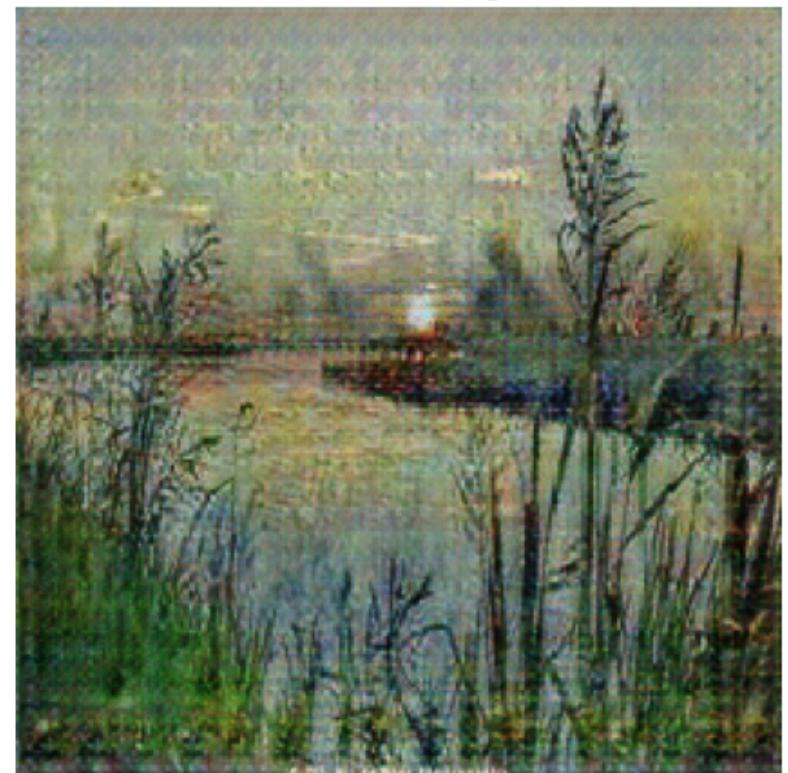
total_gen_g_loss: 2.6123 | total_gen_f_loss: 2.6344 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5943 | total_cycle_loss: 1.4147: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.6127 | total_gen_f_loss: 2.6346 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5942 | total_cycle_loss: 1.4149: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6127 | total_gen_f_loss: 2.6346 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5942 | total_cycle_loss: 1.4149:  0%|          | 1/440 [00:04<36:15,  4.96s/it]
```

```
total_gen_g_loss: 2.6135 | total_gen_f_loss: 2.6348 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5940 | total_cycle_loss: 1.4151:  12%|■          | 51/440 [00:17<01:40,  3.85it/s]
```

```
total_gen_g_loss: 2.6138 | total_gen_f_loss: 2.6349 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5939 | total_cycle_loss: 1.4153:  23%|■          | 101/440 [00:30<01:28,  3.83it/s]
```

```
total_gen_g_loss: 2.6145 | total_gen_f_loss: 2.6349 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5937 | total_cycle_loss: 1.4154:  34%|■          | 151/440 [00:43<01:14,  3.86it/s]
```

```
total_gen_g_loss: 2.6151 | total_gen_f_loss: 2.6350 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5936 | total_cycle_loss: 1.4156:  46%|■          | 201/440 [00:56<01:02,  3.85it/s]
```

```
total_gen_g_loss: 2.6158 | total_gen_f_loss: 2.6353 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5935 | total_cycle_loss: 1.4160:  57%|■          | 251/440 [01:09<00:49,  3.86it/s]
```

```
total_gen_g_loss: 2.6160 | total_gen_f_loss: 2.6349 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5934 | total_cycle_loss: 1.4159: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]
```

```
total_gen_g_loss: 2.6168 | total_gen_f_loss: 2.6351 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5931 | total_cycle_loss: 1.4161: 80%|██████| 351/440 [01:35<00:23, 3.84it/s]
```

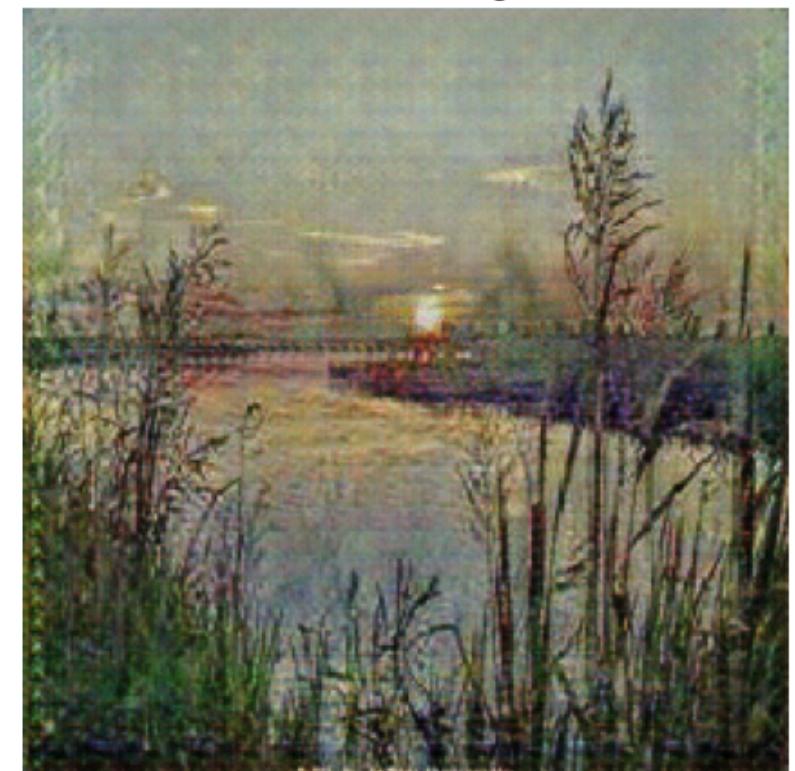
```
total_gen_g_loss: 2.6176 | total_gen_f_loss: 2.6353 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5930 | total_cycle_loss: 1.4163: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]
```

```
total_gen_g_loss: 2.6180 | total_gen_f_loss: 2.6355 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5929 | total_cycle_loss: 1.4166: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



Saving checkpoint for epoch 40 at /kaggle/working/checkpoints/train/ckpt-6  
Time taken for epoch 40 is 122.20054197311401 sec

```
total_gen_g_loss: 2.6180 | total_gen_f_loss: 2.6355 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5929 | total_cycle_loss: 1.4166: 0%|          | 1/440 [00:04<35:29, 4.85s/it]
```

```
total_gen_g_loss: 2.6188 | total_gen_f_loss: 2.6357 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5928 | total_cycle
_loss: 1.4170: 12%|██████| 51/440 [00:17<01:40, 3.86it/s]

total_gen_g_loss: 2.6194 | total_gen_f_loss: 2.6358 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5926 | total_cycle
_loss: 1.4172: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.6199 | total_gen_f_loss: 2.6361 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5925 | total_cycle
_loss: 1.4174: 34%|██████| 151/440 [00:43<01:14, 3.86it/s]

total_gen_g_loss: 2.6207 | total_gen_f_loss: 2.6364 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5924 | total_cycle
_loss: 1.4177: 46%|██████| 201/440 [00:56<01:01, 3.87it/s]

total_gen_g_loss: 2.6212 | total_gen_f_loss: 2.6366 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5923 | total_cycle
_loss: 1.4179: 57%|██████| 251/440 [01:09<00:49, 3.83it/s]

total_gen_g_loss: 2.6220 | total_gen_f_loss: 2.6369 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5922 | total_cycle
_loss: 1.4182: 68%|██████| 301/440 [01:22<00:36, 3.86it/s]

total_gen_g_loss: 2.6224 | total_gen_f_loss: 2.6370 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5921 | total_cycle
_loss: 1.4184: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

total_gen_g_loss: 2.6230 | total_gen_f_loss: 2.6371 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5920 | total_cycle
_loss: 1.4186: 91%|██████| 401/440 [01:48<00:10, 3.87it/s]

total_gen_g_loss: 2.6235 | total_gen_f_loss: 2.6373 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5918 | total_cycle
_loss: 1.4188: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6235 | total_gen_f_loss: 2.6373 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5918 | total_cycle_loss: 1.4188:  0%|          | 1/440 [00:04<35:33,  4.86s/it]
```

```
total_gen_g_loss: 2.6240 | total_gen_f_loss: 2.6375 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5917 | total_cycle_loss: 1.4189:  12%|█       | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.6247 | total_gen_f_loss: 2.6378 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5916 | total_cycle_loss: 1.4192:  23%|██      | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.6252 | total_gen_f_loss: 2.6380 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5914 | total_cycle_loss: 1.4195:  34%|███     | 151/440 [00:43<01:15,  3.84it/s]
```

```
total_gen_g_loss: 2.6258 | total_gen_f_loss: 2.6383 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5913 | total_cycle_loss: 1.4197:  46%|████    | 201/440 [00:56<01:02,  3.84it/s]
```

```
total_gen_g_loss: 2.6263 | total_gen_f_loss: 2.6383 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5912 | total_cycle_loss: 1.4198:  57%|█████   | 251/440 [01:09<00:49,  3.83it/s]
```

```
total_gen_g_loss: 2.6271 | total_gen_f_loss: 2.6384 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5910 | total_cycle_loss: 1.4201: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]
```

```
total_gen_g_loss: 2.6274 | total_gen_f_loss: 2.6384 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5909 | total_cycle_loss: 1.4203: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]
```

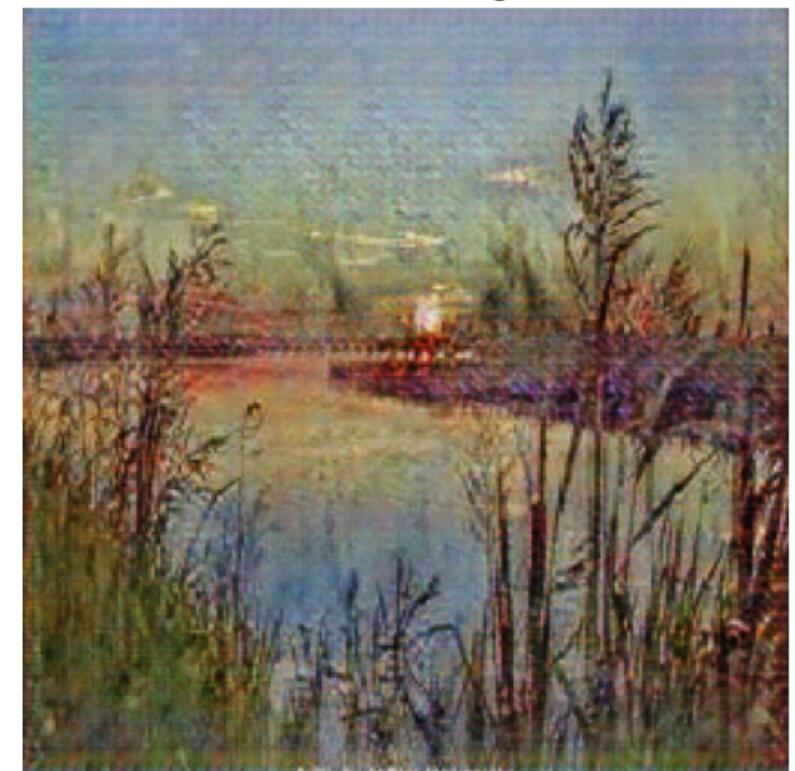
```
total_gen_g_loss: 2.6277 | total_gen_f_loss: 2.6384 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5908 | total_cycle_loss: 1.4204: 91%|██████| 401/440 [01:48<00:10, 3.84it/s]
```

```
total_gen_g_loss: 2.6282 | total_gen_f_loss: 2.6382 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5907 | total_cycle_loss: 1.4204: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6282 | total_gen_f_loss: 2.6382 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5907 | total_cycle_loss: 1.4204: 0%|          | 1/440 [00:04<34:54, 4.77s/it]
```

```
total_gen_g_loss: 2.6285 | total_gen_f_loss: 2.6382 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5907 | total_cycle_loss: 1.4205: 12%|█       | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.6291 | total_gen_f_loss: 2.6382 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5905 | total_cycle
_loss: 1.4208: 23%|██████| 101/440 [00:30<01:27, 3.85it/s]

total_gen_g_loss: 2.6294 | total_gen_f_loss: 2.6380 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5904 | total_cycle
_loss: 1.4208: 34%|██████| 151/440 [00:43<01:15, 3.84it/s]

total_gen_g_loss: 2.6297 | total_gen_f_loss: 2.6378 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5903 | total_cycle
_loss: 1.4208: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.6305 | total_gen_f_loss: 2.6380 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5901 | total_cycle
_loss: 1.4212: 57%|██████| 251/440 [01:09<00:49, 3.86it/s]

total_gen_g_loss: 2.6309 | total_gen_f_loss: 2.6383 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5901 | total_cycle
_loss: 1.4214: 68%|██████| 301/440 [01:22<00:35, 3.87it/s]

total_gen_g_loss: 2.6312 | total_gen_f_loss: 2.6382 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5900 | total_cycle
_loss: 1.4214: 80%|██████| 351/440 [01:35<00:23, 3.87it/s]

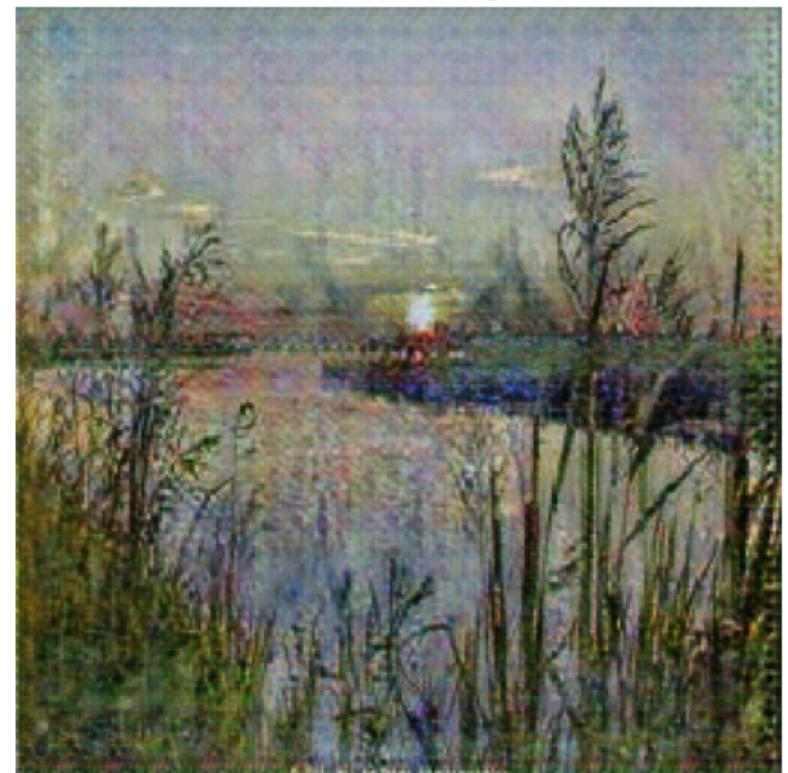
total_gen_g_loss: 2.6319 | total_gen_f_loss: 2.6383 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5899 | total_cycle
_loss: 1.4216: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.6320 | total_gen_f_loss: 2.6382 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5899 | total_cycle
_loss: 1.4216: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6320 | total_gen_f_loss: 2.6382 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5899 | total_cycle_loss: 1.4216:  0%|          | 1/440 [00:04<35:04,  4.79s/it]
```

```
total_gen_g_loss: 2.6325 | total_gen_f_loss: 2.6384 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5897 | total_cycle_loss: 1.4218:  12%|■         | 51/440 [00:17<01:41,  3.83it/s]
```

```
total_gen_g_loss: 2.6329 | total_gen_f_loss: 2.6384 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5895 | total_cycle_loss: 1.4219:  23%|■         | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.6334 | total_gen_f_loss: 2.6383 | disc_x_loss: 0.6017 | disc_Y_loss: 0.5895 | total_cycle_loss: 1.4221:  34%|■         | 151/440 [00:43<01:14,  3.87it/s]
```

```
total_gen_g_loss: 2.6340 | total_gen_f_loss: 2.6384 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5894 | total_cycle_loss: 1.4224:  46%|■         | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.6347 | total_gen_f_loss: 2.6385 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5891 | total_cycle_loss: 1.4226:  57%|■         | 251/440 [01:09<00:48,  3.87it/s]
```

```
total_gen_g_loss: 2.6354 | total_gen_f_loss: 2.6386 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5890 | total_cycle_loss: 1.4228: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]
```

```
total_gen_g_loss: 2.6364 | total_gen_f_loss: 2.6388 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5888 | total_cycle_loss: 1.4231: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

```
total_gen_g_loss: 2.6371 | total_gen_f_loss: 2.6389 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5887 | total_cycle_loss: 1.4234: 91%|██████| 401/440 [01:48<00:10, 3.84it/s]
```

```
total_gen_g_loss: 2.6376 | total_gen_f_loss: 2.6393 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5886 | total_cycle_loss: 1.4236: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6376 | total_gen_f_loss: 2.6393 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5886 | total_cycle_loss: 1.4236: 0%|          | 1/440 [00:04<34:58, 4.78s/it]
```

```
total_gen_g_loss: 2.6380 | total_gen_f_loss: 2.6392 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5885 | total_cycle_loss: 1.4237: 12%|█       | 51/440 [00:17<01:41, 3.83it/s]
```

```
total_gen_g_loss: 2.6386 | total_gen_f_loss: 2.6400 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5884 | total_cycle
_loss: 1.4241: 23%|██████| 101/440 [00:30<01:28, 3.81it/s]

total_gen_g_loss: 2.6393 | total_gen_f_loss: 2.6400 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5882 | total_cycle
_loss: 1.4243: 34%|██████| 151/440 [00:43<01:15, 3.83it/s]

total_gen_g_loss: 2.6401 | total_gen_f_loss: 2.6400 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5880 | total_cycle
_loss: 1.4245: 46%|██████| 201/440 [00:56<01:01, 3.86it/s]

total_gen_g_loss: 2.6406 | total_gen_f_loss: 2.6400 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5878 | total_cycle
_loss: 1.4246: 57%|██████| 251/440 [01:09<00:48, 3.87it/s]

total_gen_g_loss: 2.6413 | total_gen_f_loss: 2.6402 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5877 | total_cycle
_loss: 1.4247: 68%|██████| 301/440 [01:22<00:36, 3.84it/s]

total_gen_g_loss: 2.6421 | total_gen_f_loss: 2.6406 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5876 | total_cycle
_loss: 1.4251: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]

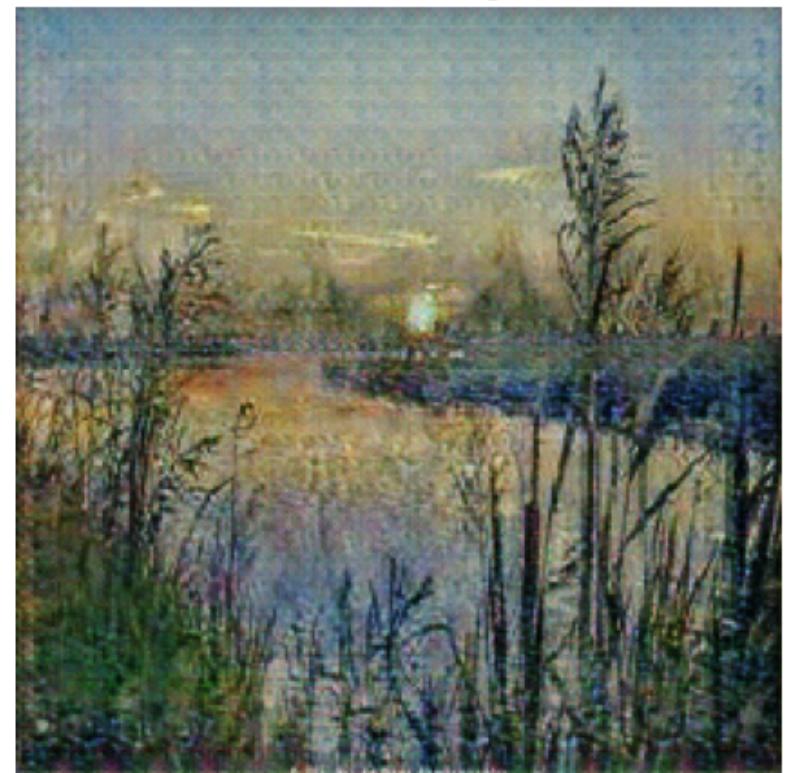
total_gen_g_loss: 2.6426 | total_gen_f_loss: 2.6409 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5876 | total_cycle
_loss: 1.4254: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.6427 | total_gen_f_loss: 2.6409 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5876 | total_cycle
_loss: 1.4254: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6427 | total_gen_f_loss: 2.6409 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5876 | total_cycle_loss: 1.4254:  0%|          | 1/440 [00:04<34:52,  4.77s/it]
```

```
total_gen_g_loss: 2.6432 | total_gen_f_loss: 2.6410 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5875 | total_cycle_loss: 1.4257:  12%|■          | 51/440 [00:17<01:40,  3.86it/s]
```

```
total_gen_g_loss: 2.6438 | total_gen_f_loss: 2.6413 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5874 | total_cycle_loss: 1.4260:  23%|■          | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.6447 | total_gen_f_loss: 2.6416 | disc_x_loss: 0.6016 | disc_Y_loss: 0.5871 | total_cycle_loss: 1.4262:  34%|■          | 151/440 [00:43<01:15,  3.84it/s]
```

```
total_gen_g_loss: 2.6454 | total_gen_f_loss: 2.6418 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5870 | total_cycle_loss: 1.4264:  46%|■          | 201/440 [00:56<01:01,  3.86it/s]
```

```
total_gen_g_loss: 2.6458 | total_gen_f_loss: 2.6417 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5868 | total_cycle_loss: 1.4264:  57%|■          | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.6464 | total_gen_f_loss: 2.6418 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5868 | total_cycle_loss: 1.4267: 68%|██████| 301/440 [01:22<00:35, 3.87it/s]
```

```
total_gen_g_loss: 2.6471 | total_gen_f_loss: 2.6421 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5865 | total_cycle_loss: 1.4269: 80%|██████| 351/440 [01:35<00:23, 3.85it/s]
```

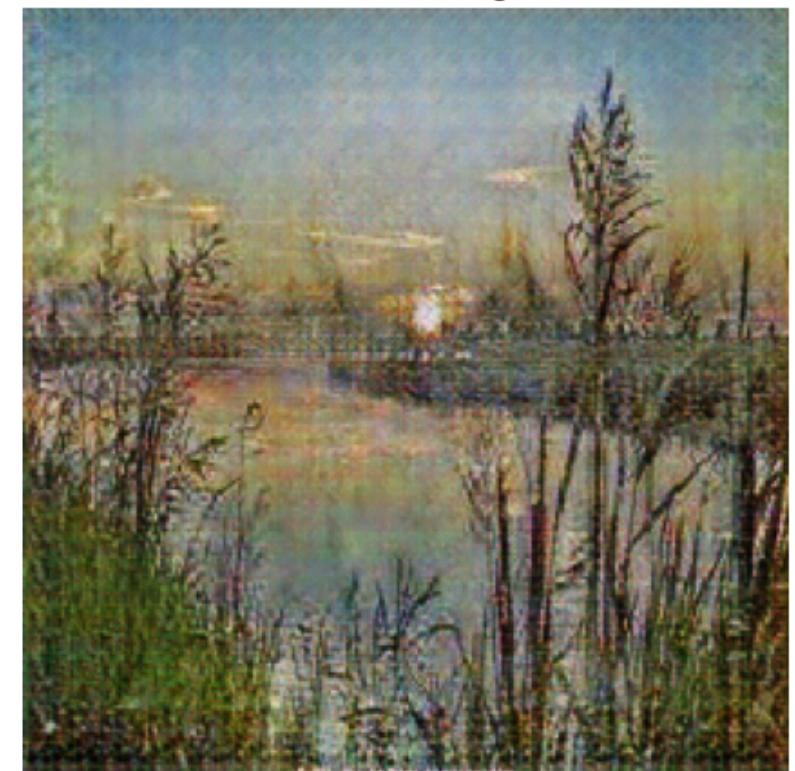
```
total_gen_g_loss: 2.6478 | total_gen_f_loss: 2.6426 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5864 | total_cycle_loss: 1.4273: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]
```

```
total_gen_g_loss: 2.6483 | total_gen_f_loss: 2.6429 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5863 | total_cycle_loss: 1.4275: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6483 | total_gen_f_loss: 2.6429 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5863 | total_cycle_loss: 1.4275: 0% | 1/440 [00:04<35:56, 4.91s/it]
```

```
total_gen_g_loss: 2.6489 | total_gen_f_loss: 2.6429 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5862 | total_cycle_loss: 1.4277: 12%|█ | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.6493 | total_gen_f_loss: 2.6432 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5861 | total_cycle
_loss: 1.4280: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.6501 | total_gen_f_loss: 2.6434 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5860 | total_cycle
_loss: 1.4282: 34%|██████| 151/440 [00:43<01:14, 3.87it/s]

total_gen_g_loss: 2.6506 | total_gen_f_loss: 2.6435 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5859 | total_cycle
_loss: 1.4284: 46%|██████| 201/440 [00:56<01:01, 3.86it/s]

total_gen_g_loss: 2.6513 | total_gen_f_loss: 2.6436 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5858 | total_cycle
_loss: 1.4286: 57%|██████| 251/440 [01:09<00:49, 3.84it/s]

total_gen_g_loss: 2.6520 | total_gen_f_loss: 2.6440 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5856 | total_cycle
_loss: 1.4289: 68%|██████| 301/440 [01:22<00:35, 3.87it/s]

total_gen_g_loss: 2.6524 | total_gen_f_loss: 2.6439 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5855 | total_cycle
_loss: 1.4289: 80%|██████| 351/440 [01:35<00:23, 3.80it/s]

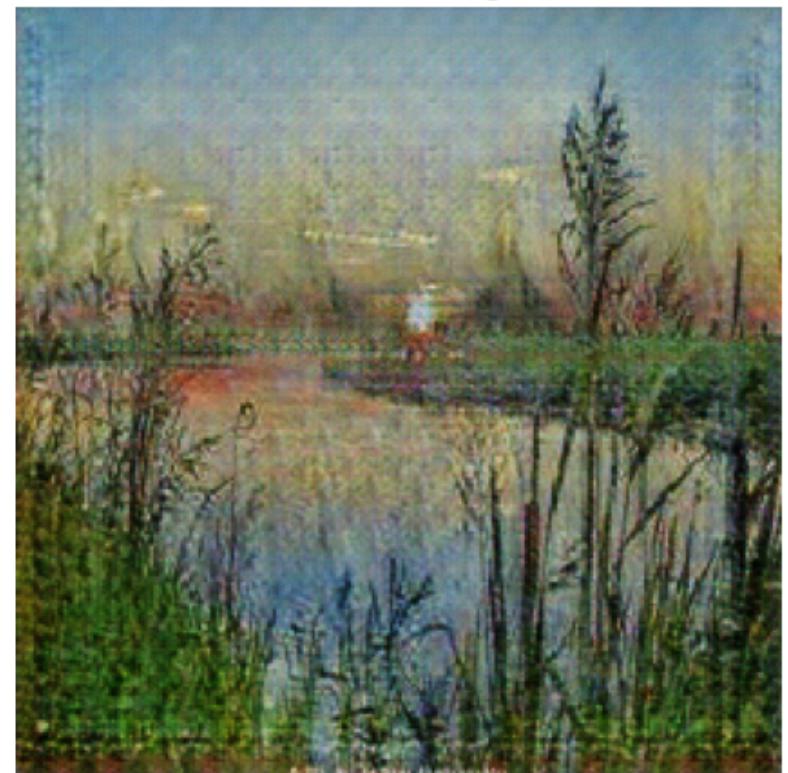
total_gen_g_loss: 2.6530 | total_gen_f_loss: 2.6440 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5854 | total_cycle
_loss: 1.4292: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.6535 | total_gen_f_loss: 2.6439 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5854 | total_cycle
_loss: 1.4293: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6535 | total_gen_f_loss: 2.6439 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5854 | total_cycle_loss: 1.4293:  0%|          | 1/440 [00:04<35:00,  4.78s/it]
```

```
total_gen_g_loss: 2.6542 | total_gen_f_loss: 2.6439 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5852 | total_cycle_loss: 1.4294:  12%|█       | 51/440 [00:17<01:40,  3.87it/s]
```

```
total_gen_g_loss: 2.6545 | total_gen_f_loss: 2.6437 | disc_x_loss: 0.6015 | disc_Y_loss: 0.5851 | total_cycle_loss: 1.4295:  23%|██      | 101/440 [00:30<01:27,  3.86it/s]
```

```
total_gen_g_loss: 2.6550 | total_gen_f_loss: 2.6440 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5849 | total_cycle_loss: 1.4297:  34%|███     | 151/440 [00:43<01:14,  3.86it/s]
```

```
total_gen_g_loss: 2.6556 | total_gen_f_loss: 2.6441 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5848 | total_cycle_loss: 1.4299:  46%|████    | 201/440 [00:56<01:01,  3.87it/s]
```

```
total_gen_g_loss: 2.6558 | total_gen_f_loss: 2.6441 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5849 | total_cycle_loss: 1.4300:  57%|█████   | 251/440 [01:09<00:49,  3.82it/s]
```

```
total_gen_g_loss: 2.6564 | total_gen_f_loss: 2.6443 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5846 | total_cycle_loss: 1.4302: 68%|██████| 301/440 [01:22<00:35, 3.87it/s]
```

```
total_gen_g_loss: 2.6570 | total_gen_f_loss: 2.6445 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5844 | total_cycle_loss: 1.4304: 80%|██████| 351/440 [01:35<00:23, 3.86it/s]
```

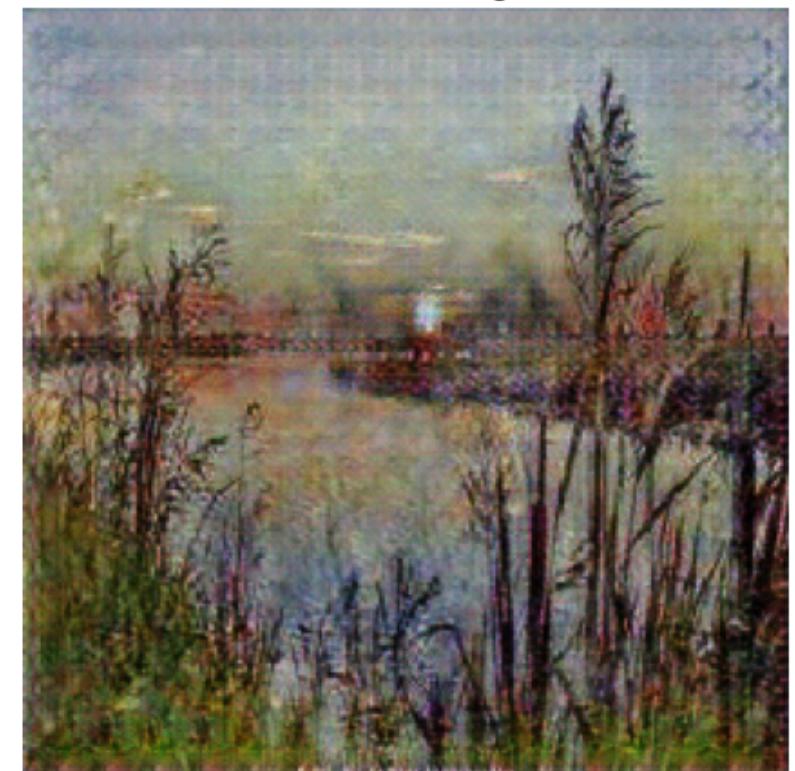
```
total_gen_g_loss: 2.6572 | total_gen_f_loss: 2.6442 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5844 | total_cycle_loss: 1.4305: 91%|██████| 401/440 [01:48<00:10, 3.87it/s]
```

```
total_gen_g_loss: 2.6576 | total_gen_f_loss: 2.6443 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5843 | total_cycle_loss: 1.4306: 100%|██████| 440/440 [01:58<00:00, 3.71it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6577 | total_gen_f_loss: 2.6443 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5843 | total_cycle_loss: 1.4307: 0% | 1/440 [00:04<34:54, 4.77s/it]
```

```
total_gen_g_loss: 2.6583 | total_gen_f_loss: 2.6446 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5841 | total_cycle_loss: 1.4310: 12%|█ | 51/440 [00:17<01:40, 3.86it/s]
```

```
total_gen_g_loss: 2.6586 | total_gen_f_loss: 2.6445 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5841 | total_cycle
_loss: 1.4311: 23%|██████| 101/440 [00:30<01:27, 3.86it/s]

total_gen_g_loss: 2.6590 | total_gen_f_loss: 2.6448 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5840 | total_cycle
_loss: 1.4312: 34%|██████| 151/440 [00:43<01:15, 3.85it/s]

total_gen_g_loss: 2.6598 | total_gen_f_loss: 2.6450 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5838 | total_cycle
_loss: 1.4315: 46%|██████| 201/440 [00:56<01:02, 3.85it/s]

total_gen_g_loss: 2.6602 | total_gen_f_loss: 2.6450 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5838 | total_cycle
_loss: 1.4317: 57%|██████| 251/440 [01:09<00:48, 3.86it/s]

total_gen_g_loss: 2.6609 | total_gen_f_loss: 2.6452 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5836 | total_cycle
_loss: 1.4320: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]

total_gen_g_loss: 2.6615 | total_gen_f_loss: 2.6455 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5835 | total_cycle
_loss: 1.4324: 80%|██████| 351/440 [01:35<00:23, 3.82it/s]

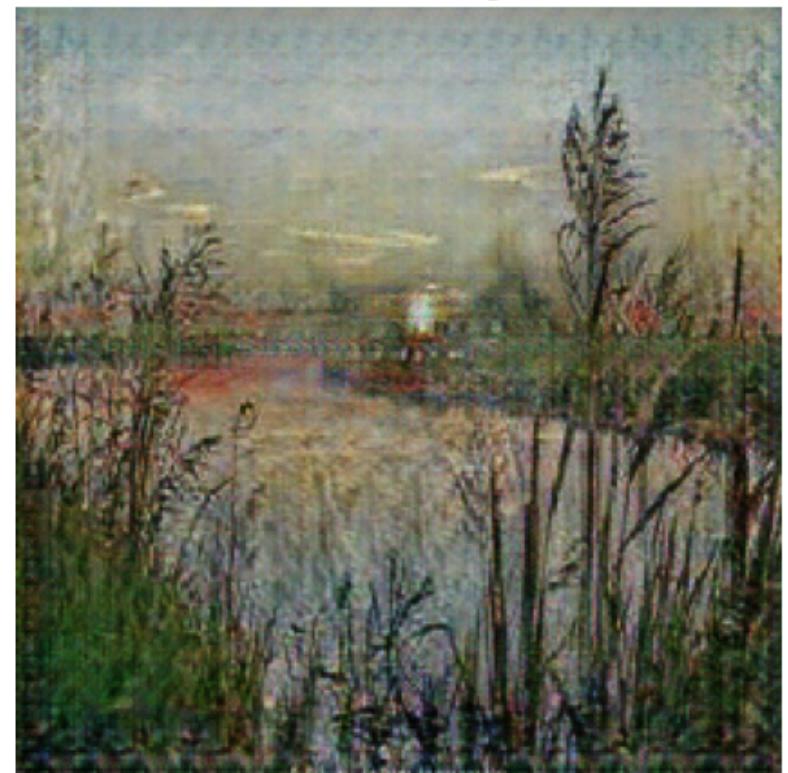
total_gen_g_loss: 2.6619 | total_gen_f_loss: 2.6458 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5835 | total_cycle
_loss: 1.4326: 91%|██████| 401/440 [01:48<00:10, 3.86it/s]

total_gen_g_loss: 2.6621 | total_gen_f_loss: 2.6458 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5834 | total_cycle
_loss: 1.4326: 100%|████████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



Predicted Image



```
total_gen_g_loss: 2.6621 | total_gen_f_loss: 2.6458 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5834 | total_cycle_loss: 1.4326:  0%|          | 1/440 [00:04<35:18,  4.83s/it]
```

```
total_gen_g_loss: 2.6626 | total_gen_f_loss: 2.6462 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5833 | total_cycle_loss: 1.4329:  12%|■         | 51/440 [00:17<01:41,  3.84it/s]
```

```
total_gen_g_loss: 2.6634 | total_gen_f_loss: 2.6464 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5831 | total_cycle_loss: 1.4331:  23%|■         | 101/440 [00:30<01:28,  3.85it/s]
```

```
total_gen_g_loss: 2.6643 | total_gen_f_loss: 2.6467 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5829 | total_cycle_loss: 1.4334:  34%|■         | 151/440 [00:43<01:15,  3.83it/s]
```

```
total_gen_g_loss: 2.6651 | total_gen_f_loss: 2.6471 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5828 | total_cycle_loss: 1.4337:  46%|■         | 201/440 [00:56<01:02,  3.83it/s]
```

```
total_gen_g_loss: 2.6656 | total_gen_f_loss: 2.6475 | disc_x_loss: 0.6011 | disc_Y_loss: 0.5826 | total_cycle_loss: 1.4339:  57%|■         | 251/440 [01:09<00:48,  3.86it/s]
```

```
total_gen_g_loss: 2.6659 | total_gen_f_loss: 2.6475 | disc_x_loss: 0.6012 | disc_Y_loss: 0.5826 | total_cycle_loss: 1.4341: 68%|██████| 301/440 [01:22<00:35, 3.86it/s]

total_gen_g_loss: 2.6664 | total_gen_f_loss: 2.6474 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5825 | total_cycle_loss: 1.4342: 80%|██████| 351/440 [01:35<00:22, 3.87it/s]

total_gen_g_loss: 2.6668 | total_gen_f_loss: 2.6475 | disc_x_loss: 0.6013 | disc_Y_loss: 0.5825 | total_cycle_loss: 1.4344: 91%|██████| 401/440 [01:48<00:10, 3.85it/s]

total_gen_g_loss: 2.6675 | total_gen_f_loss: 2.6479 | disc_x_loss: 0.6014 | disc_Y_loss: 0.5823 | total_cycle_loss: 1.4347: 100%|██████| 440/440 [01:58<00:00, 3.70it/s]
```

Input Image



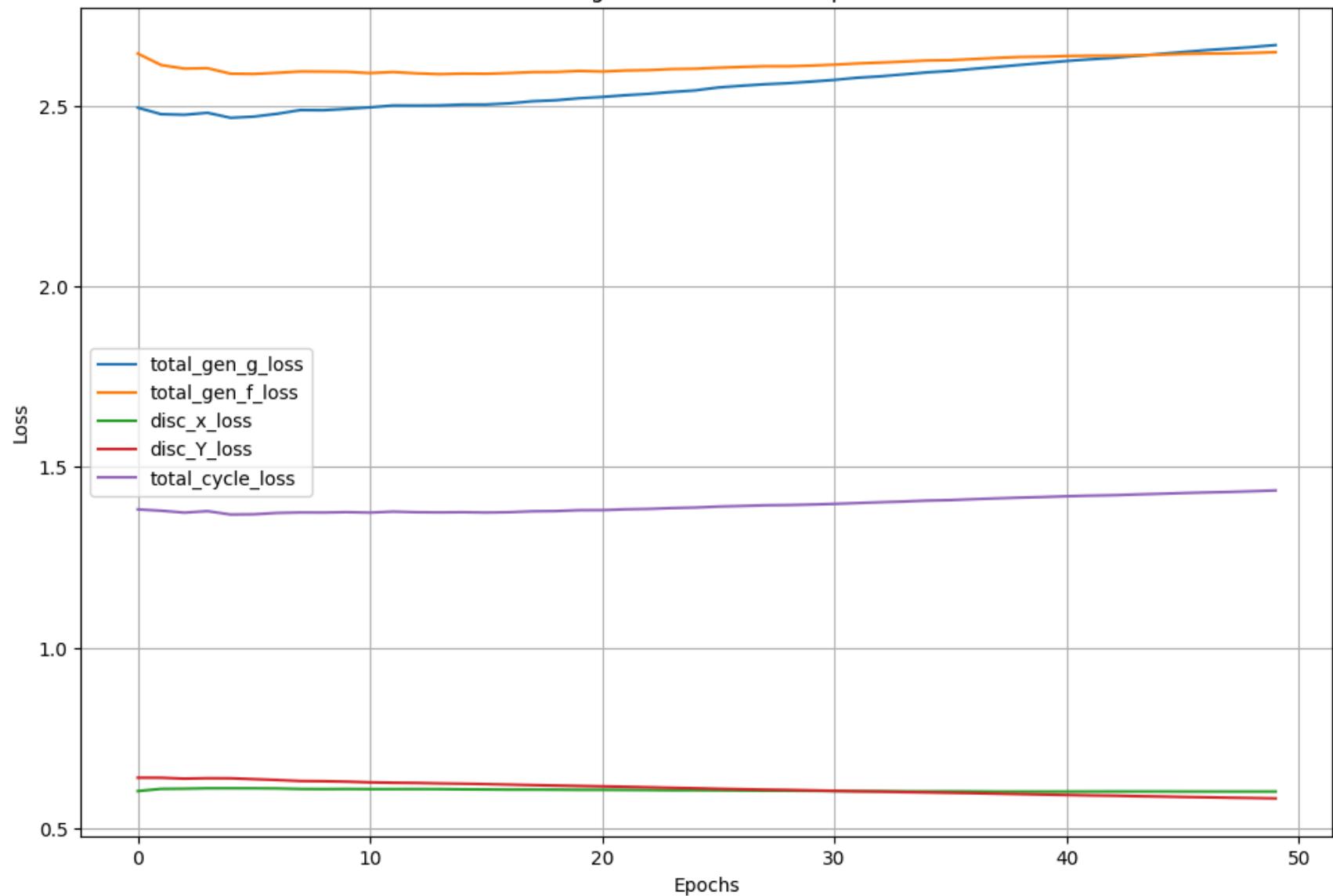
Predicted Image



Saving checkpoint for epoch 50 at /kaggle/working/checkpoints/train/ckpt-7  
Time taken for epoch 50 is 122.04575634002686 sec

In [31]: `metrics_tracker.plot_metrics()`

## Training and Metrics Over Epochs

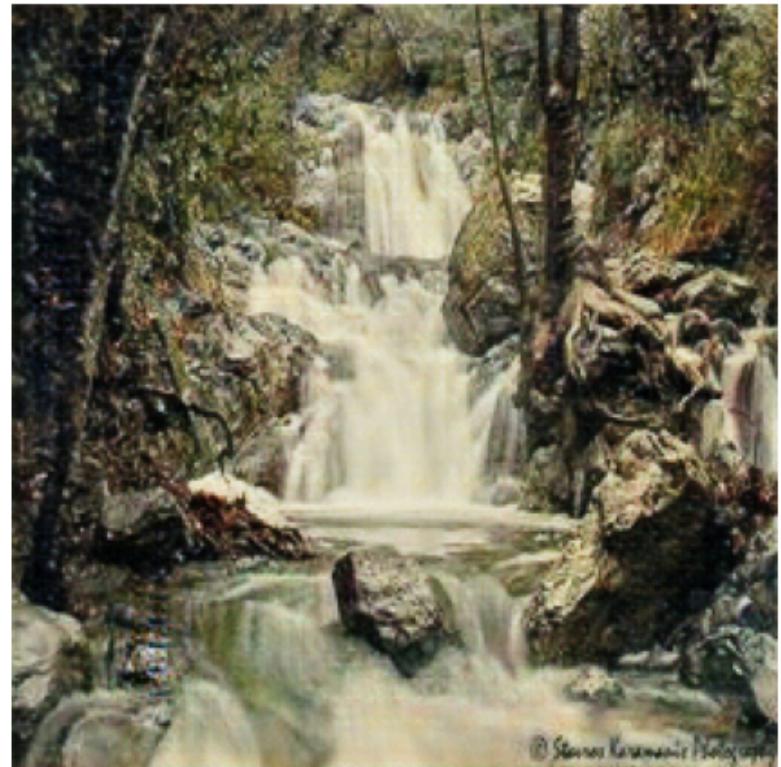


```
In [32]: # Run the trained model on the real images test dataset
for inp in test_images.take(20):
    generate_images(generator_g, inp)
```

Input Image



Predicted Image



Input Image



Predicted Image



Input Image



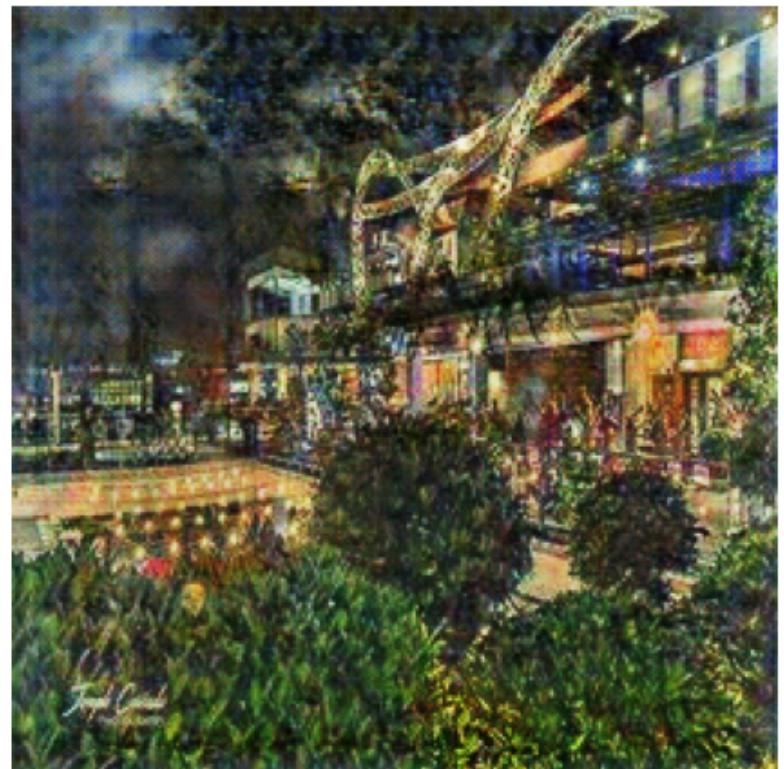
Predicted Image



Input Image



Predicted Image



Input Image



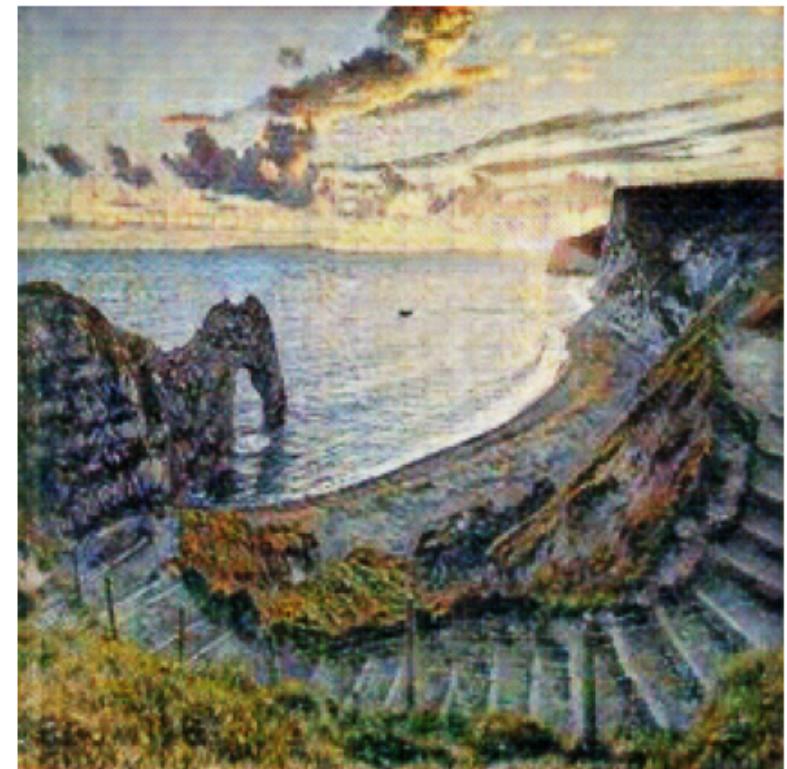
Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



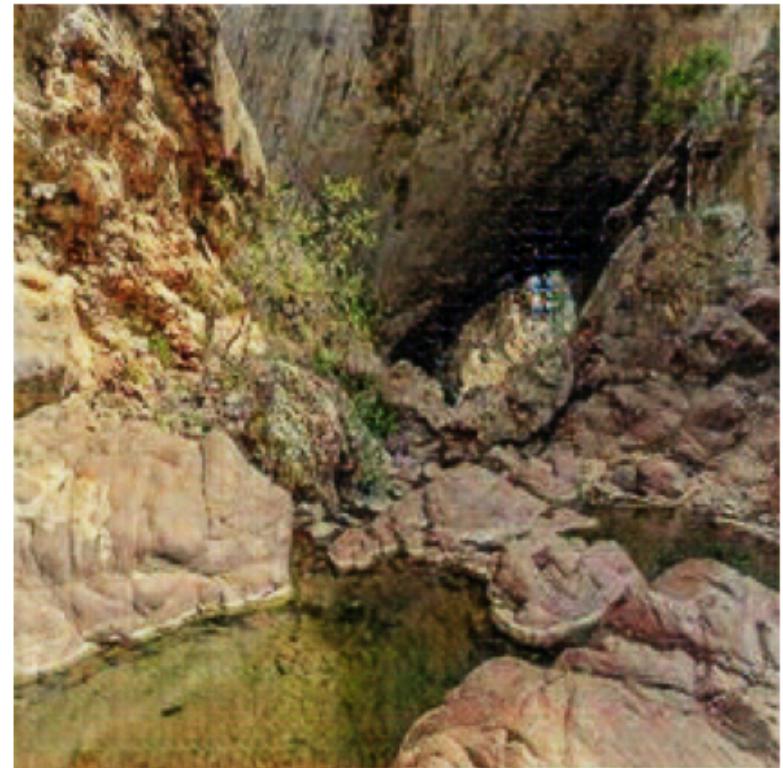
Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



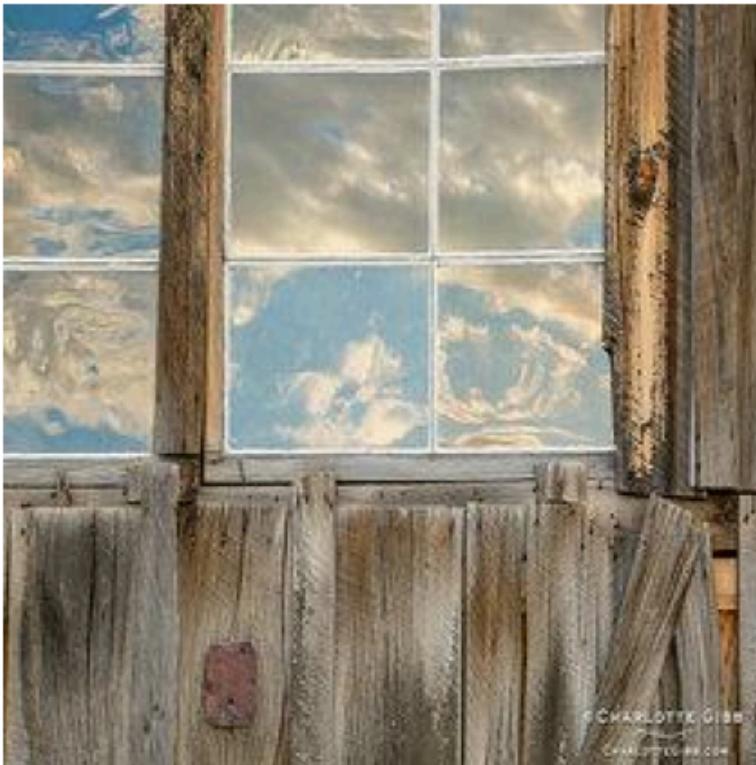
Input Image



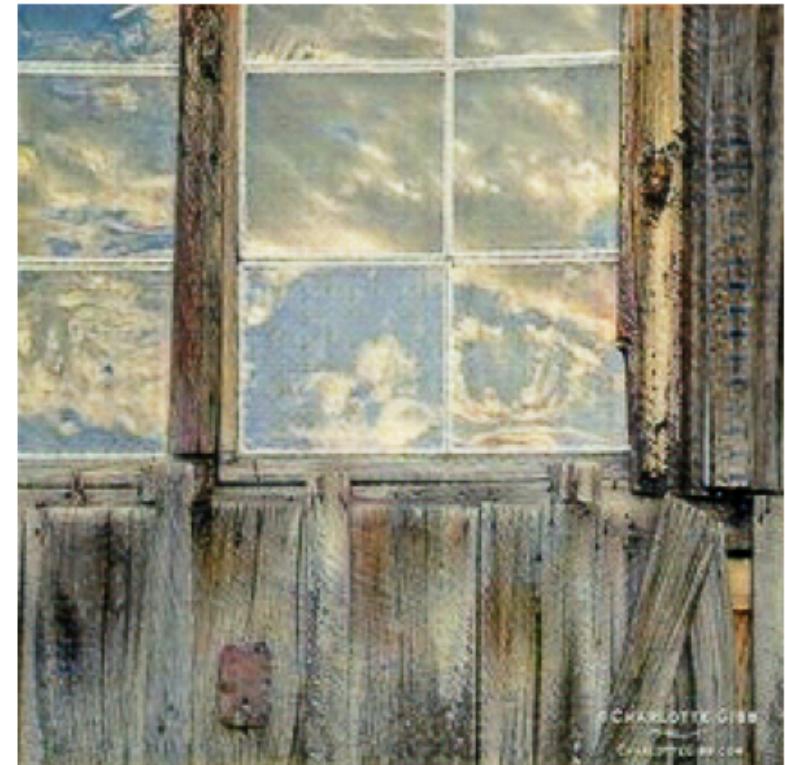
Predicted Image



Input Image



Predicted Image



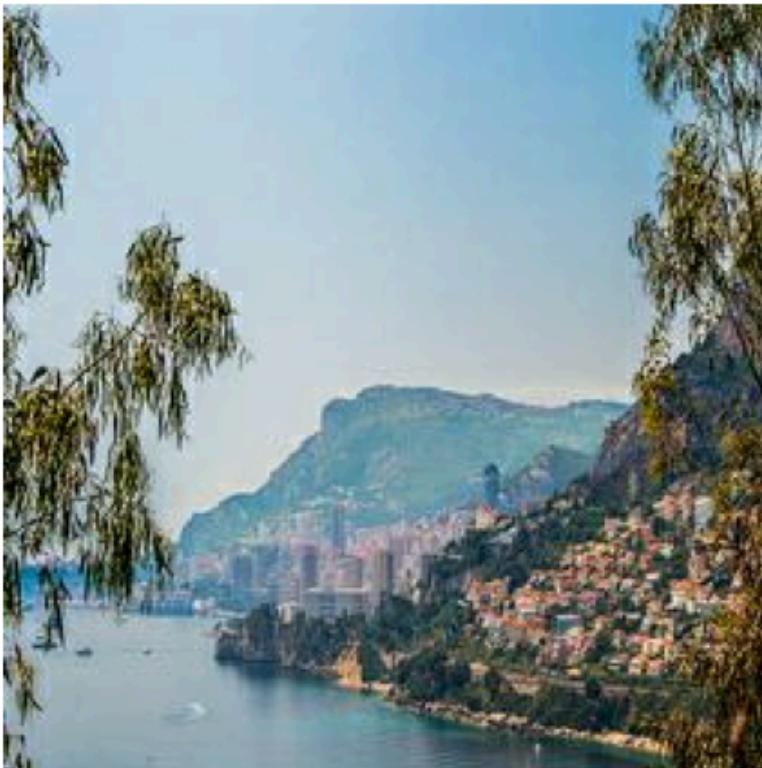
Input Image



Predicted Image



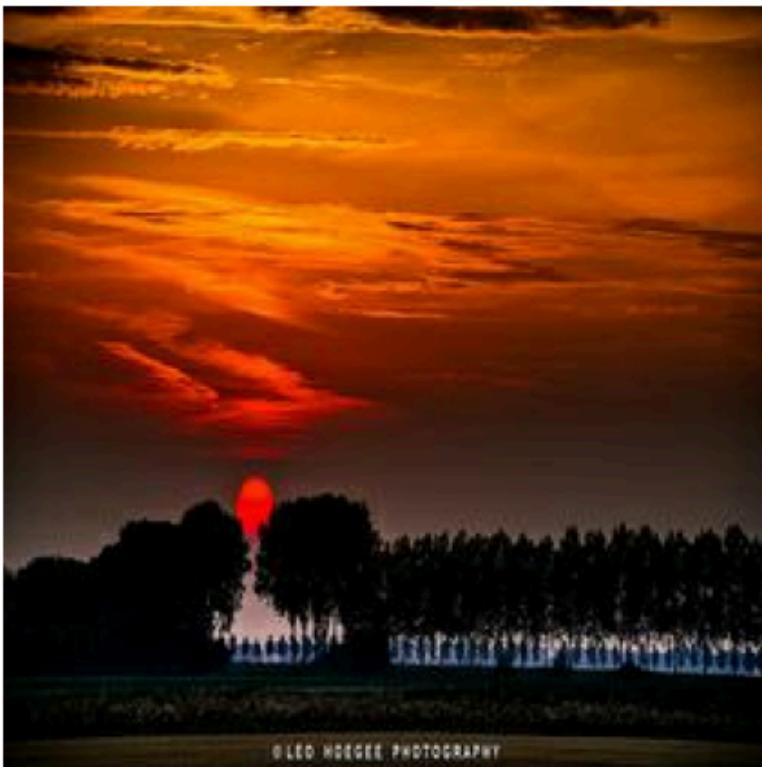
Input Image



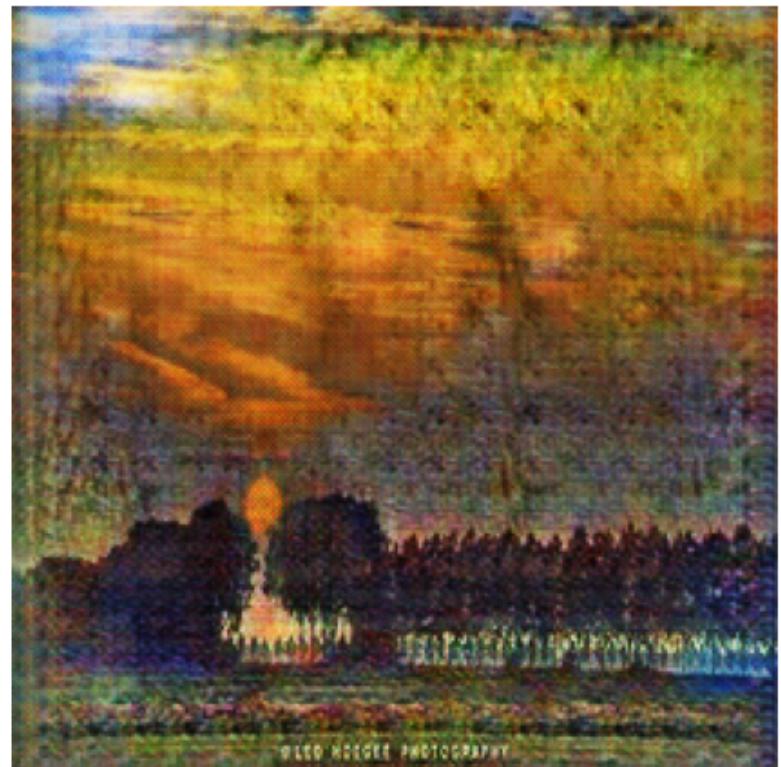
Predicted Image



Input Image



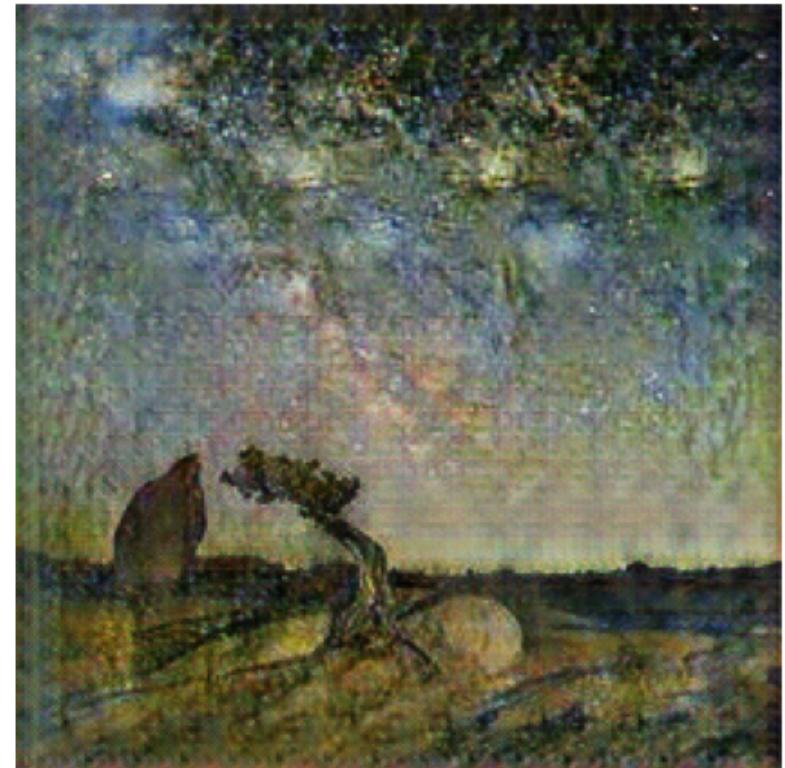
Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



```
In [33]: # Run the trained model on the monet images test dataset
with tf.device('/cpu:0'):
    for inp in test_monet.take(20):
        generate_images(generator_f, inp)
```

Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



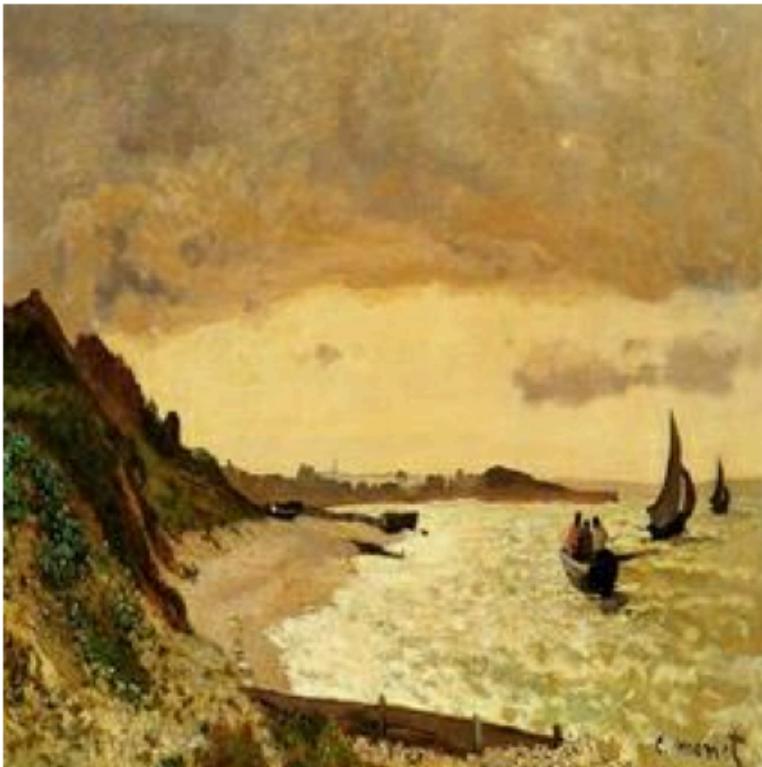
Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



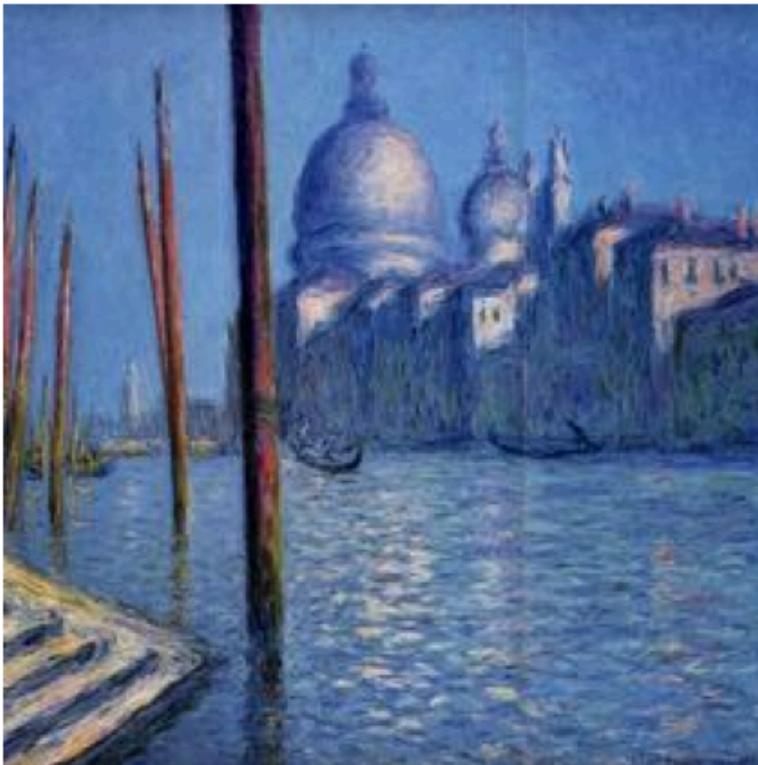
Input Image



Predicted Image



Input Image



Predicted Image



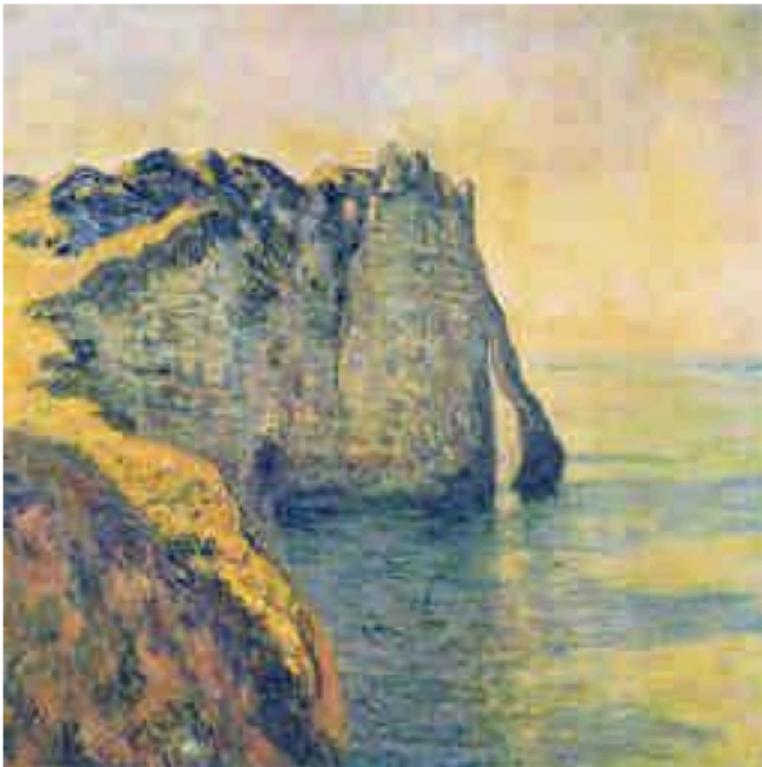
Input Image



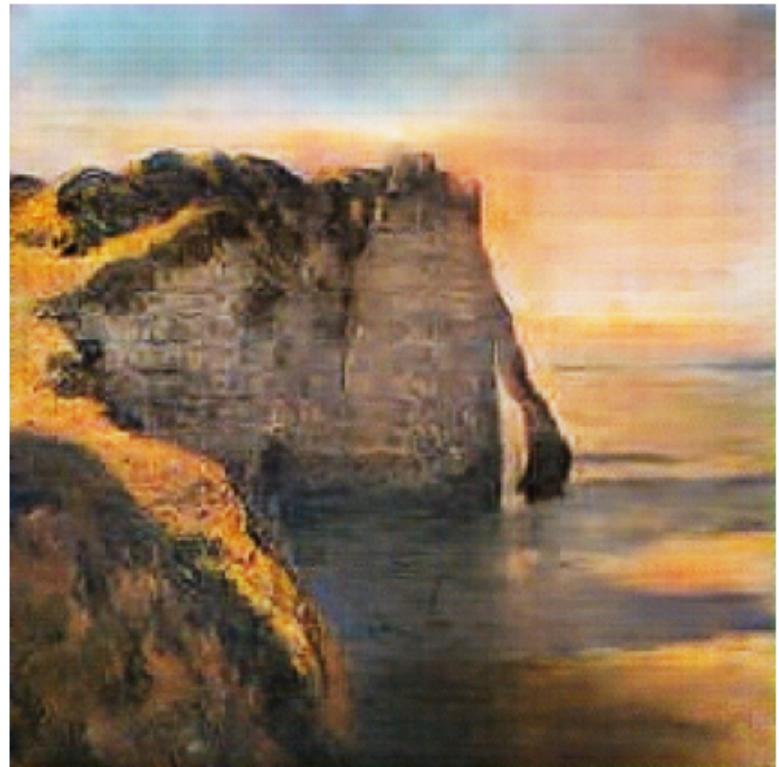
Predicted Image



Input Image



Predicted Image



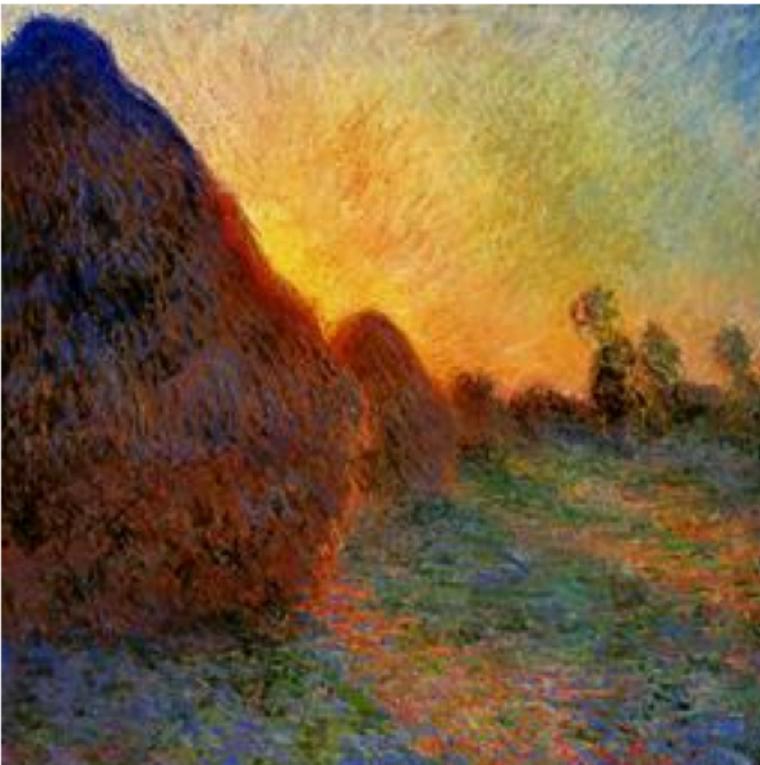
Input Image



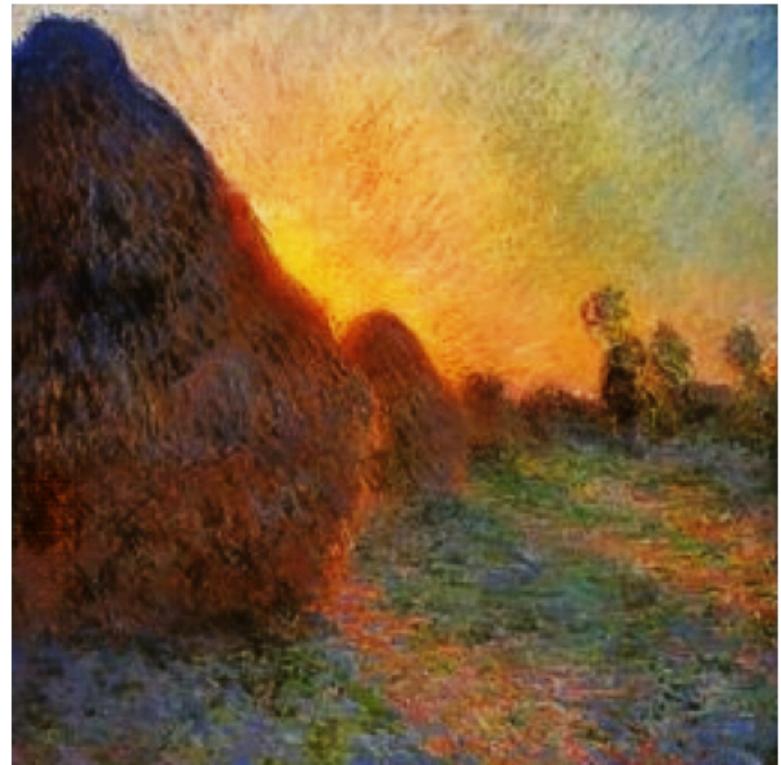
Predicted Image



Input Image



Predicted Image



Input Image



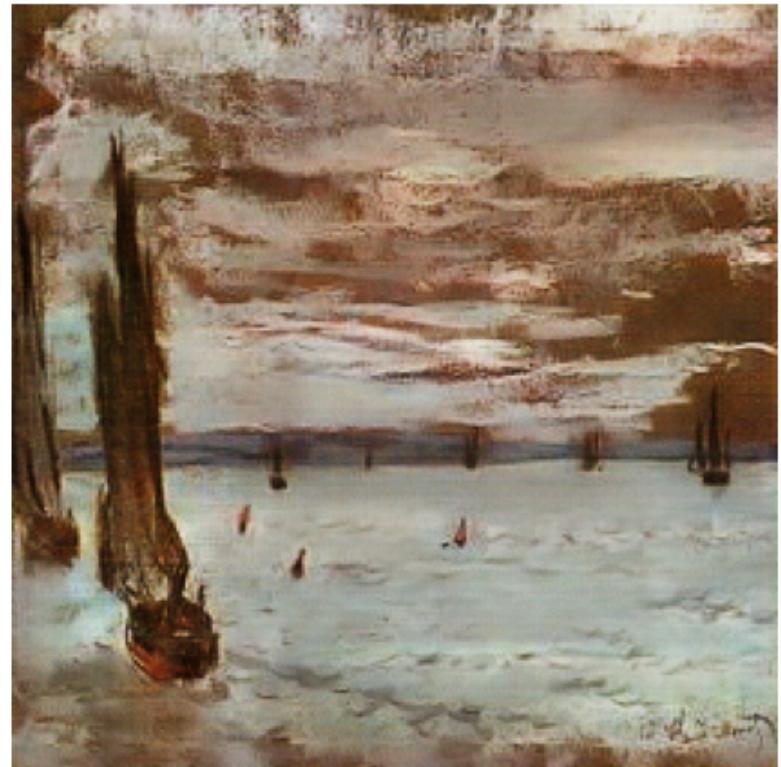
Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



Input Image



Predicted Image



```
In [34]: def load_images_as_tensors(file_paths):
    images = []
    for file_path in file_paths:
        with tf.device('/cpu:0'):
            image = tf.io.read_file(file_path)
            image = tf.image.decode_image(image, channels=3) # Decode image with 3 channels (RGB)
            image = tf.image.resize(image, [256, 256]) # Resize if needed
            images.append(image)
    with tf.device('/cpu:0'):
        images = tf.convert_to_tensor(images)
    return images

with tf.device('/cpu:0'):

    testing_image_dir = '/kaggle/input/testing-images/testing_images'
    testing_image_paths = [os.path.join(testing_image_dir, filename) for filename in os.listdir(testing_image)

    testing_images = load_images_as_tensors(testing_image_paths)
```

```
test_image_dataset = tf.data.Dataset.from_tensor_slices(testing_images)

testing_dataset = test_image_dataset.cache().map(
    preprocess_image_train, num_parallel_calls=AUTOTUNE).shuffle(
    BUFFER_SIZE).batch(BATCH_SIZE)

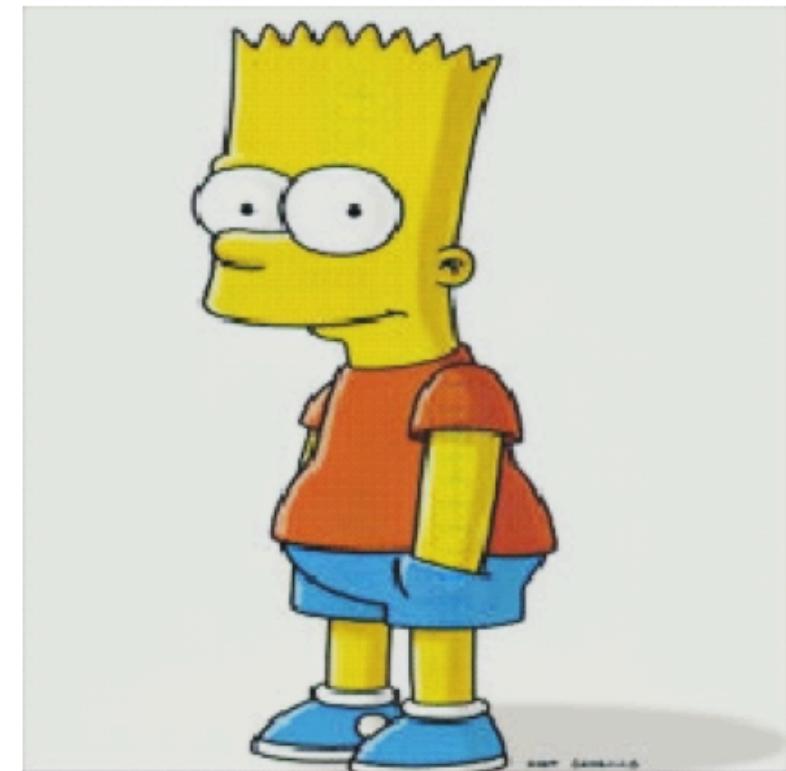
for img in testing_dataset.take(2):
    print('Testing model with random images:')
    generate_images(generator_g, img)
```

Testing model with random images:

Input Image

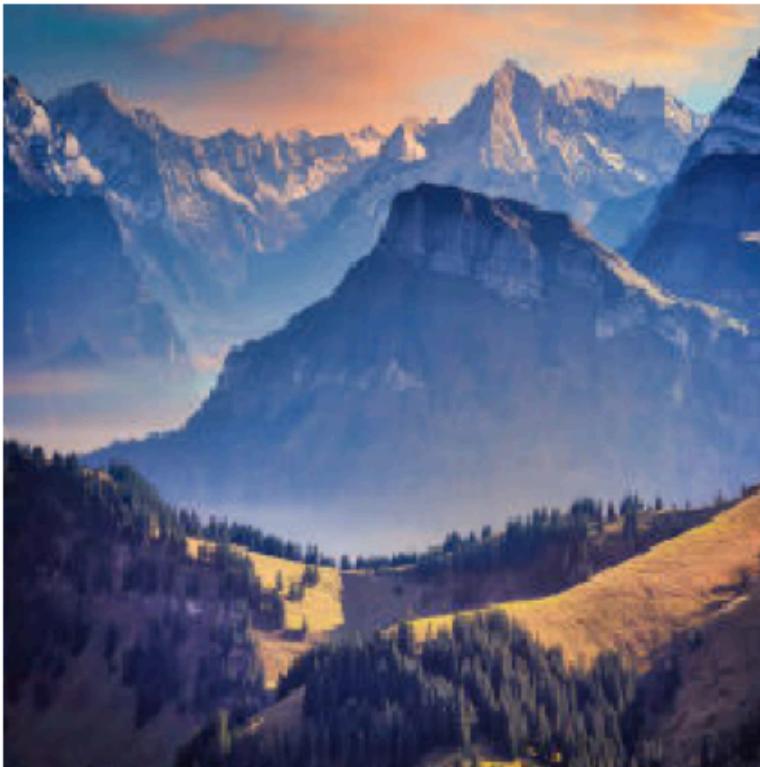


Predicted Image



Testing model with random images:

Input Image



Predicted Image



In [ ]:

In [ ]: