Implementing Noise2Noise for Dynamic Scenes

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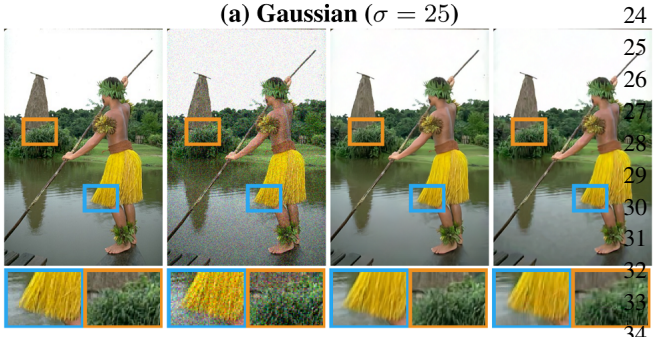
Abstract

Implementing Noise2Noise for Dynamic Scenes

1. Dataset

(a) Gaussian ($\sigma = 25$)



There's the dataset.

1.1. Codes

```
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import tensorflow as tf

def parse_tfrecord_tf(record):
    features = tf.parse_single_example(rec
        'shape': tf.FixedLenFeature([3], t
        'data': tf.FixedLenFeature([], tf.
    data = tf.decode_raw(features['data'],
    return tf.reshape(data, features['shape

# [c,h,w] -> [h,w,c]
def chw_to_hwc(x):
    return tf.transpose(x, perm=[1, 2, 0])

# [h,w,c] -> [c,h,w]
def hwc_to_chw(x):
    return tf.transpose(x, perm=[2, 0, 1])

def resize_small_image(x):
    shape = tf.shape(x)
    return tf.cond(
        tf.logical_or(
            tf.less(shape[2], 256),
            tf.less(shape[1], 256)
        ),
        true_fn=lambda: hwc_to_chw(tf.image.resize_i
        false_fn=lambda: tf.cast(x, tf.float32)
    )

def random_crop_noised_clean(x, add_noise):
    cropped = tf.random_crop(resize_small_image(x),
    return (add_noise(cropped), add_noise(cropped),

def create_dataset(train_tfrecords, minibatch_size,
    print('Setting up dataset source from', train_
    buffer_mb  = 256
    num_threads = 2
    dset = tf.data.TFRecordDataset(train_tfrecords,
    dset = dset.repeat()
    buf_size = 1000
    dset = dset.prefetch(buf_size)
    dset = dset.map(parse_tfrecord_tf, num_parallel
    dset = dset.shuffle(buffer_size=buf_size)
    dset = dset.map(lambda x: random_crop_noised_cl
    dset = dset.batch(minibatch_size)
    it = dset.make_one_shot_iterator()
    return it
```

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it up, please be careful to use a tool that doesn't alter the margins, and that doesn't aggressively rewrite the PDF file. pdftk usually works fine.

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