

toy_problem1

November 19, 2020

```
[1]: from __future__ import division, print_function
      %matplotlib inline
      import matplotlib.pyplot as plt
      import matplotlib
      import numpy as np
      plt.rcParams['image.cmap'] = 'gist_earth'
      np.random.seed(98765)
```

```
[2]: from tf_unet import image_gen
      from tf_unet import unet
      from tf_unet import util
```

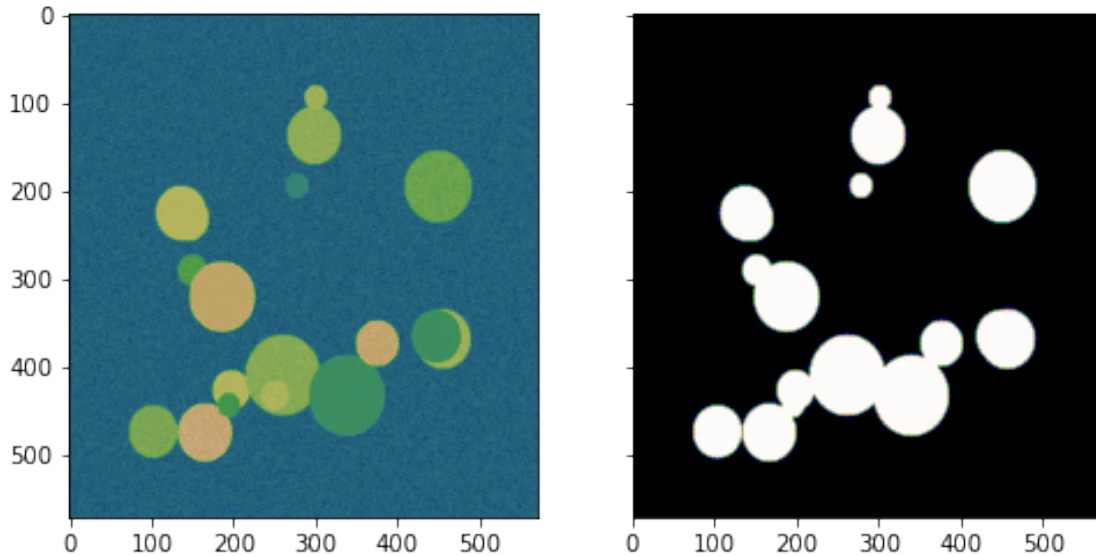
```
[3]: nx = 572
      ny = 572
```

```
[4]: generator = image_gen.GrayScaleDataProvider(nx, ny, cnt=20)
```

```
[5]: x_test, y_test = generator(1)
```

```
[6]: fig, ax = plt.subplots(1,2, sharey=True, figsize=(8,4))
      ax[0].imshow(x_test[0,...,0], aspect="auto")
      ax[1].imshow(y_test[0,...,1], aspect="auto")
```

```
[6]: <matplotlib.image.AxesImage at 0x7f347b41d220>
```



```
[7]: import tensorflow.compat.v1 as tf
      tf.disable_v2_behavior()
```

WARNING:tensorflow:From /home/royal/anaconda3/lib/python3.8/site-packages/tensorflow/python/compat/v2_compat.py:96: disable_resource_variables (from tensorflow.python.ops.variable_scope) is deprecated and will be removed in a future version.

Instructions for updating:

non-resource variables are not supported in the long term

2020-11-19 13:50:43,755 From /home/royal/anaconda3/lib/python3.8/site-packages/tensorflow/python/compat/v2_compat.py:96: disable_resource_variables (from tensorflow.python.ops.variable_scope) is deprecated and will be removed in a future version.

Instructions for updating:

non-resource variables are not supported in the long term

```
[8]: net = unet.Unet(channels=generator.channels, n_class=generator.n_class,
                    ↪ layers=3, features_root=16)
```

2020-11-19 13:50:44,406 Layers 3, features 16, filter size 3x3, pool size: 2x2

```
[9]: trainer = unet.Trainer(net, optimizer="momentum", opt_kwargs=dict(momentum=0.2))
```

```
[10]: np.seterr(invalid='ignore')
```

```
[10]: {'divide': 'warn', 'over': 'warn', 'under': 'ignore', 'invalid': 'warn'}
```

```
[11]: path = trainer.train(generator, "./UNET_trained", training_iters=32, epochs=10,
↳display_step=2)
```

```
2020-11-19 13:50:47,195 Removing '/home/royal/Desktop/UNET/demo/prediction'
2020-11-19 13:50:47,232 Removing '/home/royal/Desktop/UNET/demo/unet_trained'
2020-11-19 13:50:47,249 Allocating '/home/royal/Desktop/UNET/demo/prediction'
2020-11-19 13:50:47,251 Allocating '/home/royal/Desktop/UNET/demo/unet_trained'
2020-11-19 13:50:58,494 Verification error= 16.4%, loss= nan
2020-11-19 13:50:59,230 Start optimization
```

```
↳
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```

```
TypeError                                Traceback (most recent call↳
↳last)
```

```
<ipython-input-11-20d861088f45> in <module>
----> 1 path = trainer.train(generator, "./UNET_trained", training_iters=32,↳
↳epochs=10, display_step=2)
```

```
~/local/lib/python3.8/site-packages/tf_unet-0.1.2-py3.8.egg/tf_unet/
↳unet.py in train(self, data_provider, output_path, training_iters, epochs,↳
↳dropout, display_step, restore, write_graph, prediction_path)
447
448             if step % display_step == 0:
--> 449                 self.output_minibatch_stats(sess,↳
↳summary_writer, step, batch_x,
450                                                         util.
↳crop_to_shape(batch_y, pred_shape))
451
```

```
~/local/lib/python3.8/site-packages/tf_unet-0.1.2-py3.8.egg/tf_unet/
↳unet.py in output_minibatch_stats(self, sess, summary_writer, step, batch_x,↳
↳batch_y)
486     def output_minibatch_stats(self, sess, summary_writer, step,↳
↳batch_x, batch_y):
487         # Calculate batch loss and accuracy
--> 488         summary_str, loss, acc, predictions = sess.run([self.
↳summary_op,
489                                                         self.net.
↳cost,
490                                                         self.net.
↳accuracy,
```

```

~/anaconda3/lib/python3.8/site-packages/tensorflow/python/client/session.
↳py in run(self, fetches, feed_dict, options, run_metadata)
    955
    956     try:
--> 957         result = self._run(None, fetches, feed_dict, options_ptr,
    958                             run_metadata_ptr)
    959         if run_metadata:

~/anaconda3/lib/python3.8/site-packages/tensorflow/python/client/session.
↳py in _run(self, handle, fetches, feed_dict, options, run_metadata)
    1163
    1164     # Create a fetch handler to take care of the structure of
↳fetches.
-> 1165     fetch_handler = _FetchHandler(
    1166         self._graph, fetches, feed_dict_tensor,
↳feed_handles=feed_handles)
    1167

~/anaconda3/lib/python3.8/site-packages/tensorflow/python/client/session.
↳py in __init__(self, graph, fetches, feeds, feed_handles)
    475     """
    476     with graph.as_default():
--> 477         self._fetch_mapper = _FetchMapper.for_fetch(fetches)
    478         self._fetches = []
    479         self._targets = []

~/anaconda3/lib/python3.8/site-packages/tensorflow/python/client/session.
↳py in for_fetch(fetch)
    264     elif isinstance(fetch, (list, tuple)):
    265         # NOTE(touts): This is also the code path for namedtuples.
--> 266         return _ListFetchMapper(fetch)
    267     elif isinstance(fetch, collections_abc.Mapping):
    268         return _DictFetchMapper(fetch)

~/anaconda3/lib/python3.8/site-packages/tensorflow/python/client/session.
↳py in __init__(self, fetches)
    376     else:
    377         self._fetch_type = type(fetches)
--> 378     self._mappers = [_FetchMapper.for_fetch(fetch) for fetch in
↳fetches]
    379     self._unique_fetches, self._value_indices =
↳_uniquify_fetches(self._mappers)

```

380

```
~/anaconda3/lib/python3.8/site-packages/tensorflow/python/client/session.  
↳py in <listcomp>(.  
    376     else:  
    377         self._fetch_type = type(fetches)  
--> 378         self._mappers = [_FetchMapper.for_fetch(fetch) for fetch in  
↳fetches]  
    379         self._unique_fetches, self._value_indices =  
↳_uniqueify_fetches(self._mappers)  
    380
```

```
~/anaconda3/lib/python3.8/site-packages/tensorflow/python/client/session.  
↳py in for_fetch(fetch)  
    260     """  
    261     if fetch is None:  
--> 262         raise TypeError('Fetch argument %r has invalid type %r' %  
    263             (fetch, type(fetch)))  
    264     elif isinstance(fetch, (list, tuple)):
```

TypeError: Fetch argument None has invalid type <class 'NoneType'>

[]: