

```

In [1]: # --- Necessary Libraries --- #
import os
os.environ['PYTHONHASHSEED'] = '6072019'
import sys
import random
random.seed(1537315160)
import time
import _pickle
import pandas as pd
import numpy as np
np.random.seed(1537315160)
from itertools import chain
from datetime import datetime
from tqdm import tqdm_notebook, trange
# -- Graphing -- #
import seaborn as sns
import matplotlib.pyplot as plt
# -- Sci Kit Learn and Sci Kit Image -- #
from sklearn.model_selection import train_test_split
from skimage.io import (
    imread, imshow, concatenate_images
)
from skimage.transform import resize
from skimage.morphology import label

# --- TensorFlow ---
import tensorflow as tf
tf.set_random_seed(1537315160)
print("Tensor Seed is ",1537315160)

# --- Keras Imports --- #
from keras.models import Model, load_model
from keras.layers import (
    Input,Dropout,BatchNormalization,
    Activation,Add, LeakyReLU,
    UpSampling2D, Reshape, GaussianNoise,
    multiply, GlobalAveragePooling2D,
    Reshape, Dense, Permute
)
from keras.layers.core import Lambda
from keras.layers.convolutional import Conv2D, Conv2DTranspose
from keras.layers.pooling import MaxPooling2D
from keras.layers.merge import concatenate
from keras.callbacks import (
    EarlyStopping, ModelCheckpoint, ReduceLROnPlateau
)
from keras import backend as K
from keras.regularizers import l2

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from keras.preprocessing.image import (
    ImageDataGenerator, array_to_img, img_to_array,
    load_img
)
from keras.layers import Activation
from keras.utils.generic_utils import get_custom_objects
from keras.utils import plot_model
from keras import optimizers
from keras.optimizers import TFOptimizer
from keras.initializers import glorot_uniform, he_normal

```

Tensor Seed is 1537315160

Using TensorFlow backend.

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In [2]: def set_random(number):
        session_conf = tf.ConfigProto(
            intra_op_parallelism_threads=1,
            inter_op_parallelism_threads=1
        )
        tf.set_random_seed(number)
        sess = tf.Session(graph=tf.get_default_graph(), config=session_conf)
        K.set_session(sess)

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In [3]: # Functions to facilitate image
        # upsizing and downsizing
        def upsample(img):
            if img_size_ori == img_size_target:
                return img
            return resize(img, (img_size_target, img_size_target), mode='constant', preserve_range=True)

        def downsample(img):
            if img_size_ori == img_size_target:
                return img
            return resize(img, (img_size_ori, img_size_ori), mode='constant', preserve_range=True)

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In [4]: # Introduce swish function supposedly better performance
        # than ReLU
        # swish: sigmoid x * x .804 lb
        def swish(x):
            return (K.sigmoid(x) * x )

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```
In [5]: # dropconnect(X,P) --
# DropConnect implementation using tensorflow
def dropconnect(input_value, prob):
    return tf.nn.dropout(input_value, keep_prob=prob, seed=1537315160)
* prob
```

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In [6]: # Metric Functions
#Score the model and do a threshold optimization by the best IoU.
# src: https://www.kaggle.com/aglotero/another-iou-metric
def iou_metric(y_true_in, y_pred_in, print_table=False):
    labels, y_pred = y_true_in, y_pred_in
    true_objects, pred_objects = 2, 2
    # Jiabin find that if all zeros, then, the background is treated as
    object
    temp1 = np.histogram2d(labels.flatten(), y_pred.flatten(), bins=([
0,0.5,1], [0,0.5, 1]))
    intersection = temp1[0]

    # Compute areas (needed for finding the union between all objects)
    #print(np.histogram(labels, bins = true_objects))
    area_true = np.histogram(labels,bins=[0,0.5,1])[0]
    #print("area_true = ",area_true)
    area_pred = np.histogram(y_pred, bins=[0,0.5,1])[0]
    area_true = np.expand_dims(area_true, -1)
    area_pred = np.expand_dims(area_pred, 0)

    # Compute union
    union = area_true + area_pred - intersection

    # Exclude background from the analysis
    intersection = intersection[1:,1:]
    intersection[intersection == 0] = 1e-9

    union = union[1:,1:]
    union[union == 0] = 1e-9

    # Compute the intersection over union
    iou = intersection / union

    # Precision helper function
    def precision_at(threshold, iou):
        matches = iou > threshold
        true_positives = np.sum(matches, axis=1) == 1 # Correct objects
        false_positives = np.sum(matches, axis=0) == 0 # Missed objects
        false_negatives = np.sum(matches, axis=1) == 0 # Extra objects
        tp, fp, fn = np.sum(true_positives), np.sum(false_positives),
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np.sum(false_negatives)
    return tp, fp, fn

    # Loop over IoU thresholds
    prec = []
    if print_table:
        print("Thresh\tTP\tFP\tFN\tPrec.")
    for t in np.arange(0.5, 1.0, 0.05):
        tp, fp, fn = precision_at(t, iou)
        if (tp + fp + fn) > 0:
            p = tp / (tp + fp + fn)
        else:
            p = 0
        if print_table:
            print("{:1.3f}\t{}\t{}\t{}\t{:1.3f}".format(t, tp, fp, fn,
p))
        prec.append(p)

    if print_table:
        print("AP\t-\t-\t-\t{:1.3f}".format(np.mean(prec)))
    return np.mean(prec)

def iou_metric_batch(y_true_in, y_pred_in):
    y_pred_in = y_pred_in > 0.5 # added by sgx 20180728
    batch_size = y_true_in.shape[0]
    metric = []
    for batch in range(batch_size):
        value = iou_metric(y_true_in[batch], y_pred_in[batch])
        metric.append(value)
    return np.mean(metric)

def my_iou_metric(label, pred):
    metric_value = tf.py_func(iou_metric_batch, [label, pred], tf.float64)
    return metric_value

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In [7]: """
        used for converting the decoded image to rle mask
        Fast compared to previous one
        """
        def rle_encode(im):
            '''
            im: numpy array, 1 - mask, 0 - background
            Returns run length as string formatted
            '''
            pixels = im.flatten(order = 'F')
            pixels = np.concatenate([[0], pixels, [0]])
            runs = np.where(pixels[1:] != pixels[:-1])[0] + 1
            runs[1::2] -= runs[:-2]
            return ' '.join(str(x) for x in runs)
```

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In [8]: def predict_result(model,x_test,img_size_target): # predict both origin
        al and reflect x
            x_test_reflect = np.array([np.fliplr(x) for x in x_test])
            preds_test1 = model.predict(x_test).reshape(-1, img_size_target, i
mg_size_target)
            preds_test2_refect = model.predict(x_test_reflect).reshape(-1, img
_size_target, img_size_target)
            preds_test2 = np.array([ np.fliplr(x) for x in preds_test2_refect]
)
            preds_avg = (preds_test1 +preds_test2)/2
            return preds_avg
```

MODEL ARCH

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In [9]: custom_glorot = glorot_uniform(seed=1537315160)
        custom_he = he_normal(seed=1537315160)
```

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In [10]: def squeeze_excite_block(input_layer, ratio=16):
        ''' Create a squeeze-excite block
        Args:
            input: input tensor
            filters: number of output filters
            k: width factor
        Returns: a keras tensor
        '''
        init = input_layer
        channel_axis = 1 if K.image_data_format() == "channels_first" else
-1
        filters = init._keras_shape[channel_axis]
        se_shape = (1, 1, filters)

        se = GlobalAveragePooling2D()(init)
        se = Reshape(se_shape)(se)
        se = Dense(filters // ratio,
                    activation='relu',
                    kernel_initializer=custom_he,
                    use_bias=False)(se)
        se = Dense(filters,
                    activation='sigmoid',
                    kernel_initializer=custom_he,
                    use_bias=False)(se)

        if K.image_data_format() == 'channels_first':
            se = Permute((3, 1, 2))(se)

        x = multiply([init, se])
        return x

```

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In [11]: def convolution_block(x, filters, size, strides=(1,1), padding='same',
activation=True):
    custom_glorot = glorot_uniform(seed=1537315160)
    x = Conv2D(filters, size, strides=strides, padding=padding,
               kernel_initializer=custom_glorot)(x)
    x = BatchNormalization()(x)
    if activation == True:
        x = Activation('swish')(x)
    return x

def residual_block(blockInput, num_filters=16):
    custom_glorot = glorot_uniform(seed=1537315160)
    x = Activation('swish')(blockInput)
    x = BatchNormalization()(x)
    x = convolution_block(x, num_filters, (3,3) )
    x = convolution_block(x, num_filters, (3,3), activation=False)
    x = squeeze_excite_block(x, ratio=16)
    x = Add()([x, blockInput])
    return x
```

```
In [12]: # Build model
# for use model
def build_model(input_layer, start_neurons, DropoutRatio = 0.5):
    # For as much reproducibility as possible
    custom_glorot = glorot_uniform(seed=1537315160)
    # Applied to dropout layers
    # 101 -> 50
    conv1 = Conv2D(start_neurons * 1, (3, 3), activation=None,
                   padding="same", kernel_initializer=custom_glorot)(input_layer)
    conv1 = residual_block(conv1, start_neurons * 1)
    conv1 = residual_block(conv1, start_neurons * 1)
    conv1 = Activation('swish')(conv1)
    pool1 = MaxPooling2D((2, 2))(conv1)
    pool1 = Dropout(DropoutRatio/4, seed=1537315160)(pool1)
    #prob = 1 - (DropoutRatio/4)
    #pool1 = Lambda(dropconnect, arguments={"prob":prob})(pool1)

    # 50 -> 25
    conv2 = Conv2D(start_neurons * 2, (3, 3), activation=None,
                   padding="same", kernel_initializer=custom_glorot)(pool1)
    conv2 = residual_block(conv2, start_neurons * 2)
    conv2 = residual_block(conv2, start_neurons * 2)
    conv2 = Activation('swish')(conv2)
    pool2 = MaxPooling2D((2, 2))(conv2)
    pool2 = Dropout(DropoutRatio/2, seed=1537315160)(pool2)
    #prob = 1 - (DropoutRatio/2)
    #pool2 = Lambda(dropconnect, arguments={"prob":prob})(pool2)
```

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# 25 -> 12
conv3 = Conv2D(start_neurons * 4, (3, 3), activation=None,
padding="same",kernel_initializer=custom_glorot)(po
ol2)
conv3 = residual_block(conv3,start_neurons * 4)
conv3 = residual_block(conv3,start_neurons * 4)
conv3 = Activation('swish')(conv3)
pool3 = MaxPooling2D((2, 2))(conv3)
pool3 = Dropout(DropoutRatio/2,seed=1537315160)(pool3)
#prob = 1 - (DropoutRatio/2)
#pool3 = Lambda(dropconnect,arguments={"prob":prob})(pool3)

# 12 -> 6
conv4 = Conv2D(start_neurons * 8, (3, 3), activation=None,
padding="same",kernel_initializer=custom_glorot)(po
ol3)
conv4 = residual_block(conv4,start_neurons * 8)
conv4 = residual_block(conv4,start_neurons * 8)
conv4 = Activation('swish')(conv4)
pool4 = MaxPooling2D((2, 2))(conv4)
pool4 = Dropout(DropoutRatio/2,seed=1537315160)(pool4)
#prob = 1 - (DropoutRatio/2)
#pool4 = Lambda(dropconnect,arguments={"prob":prob})(pool4)

# Middle
convm = Conv2D(start_neurons * 16, (3, 3), activation=None,
padding="same",kernel_initializer=custom_glorot)(po
ol4)
convm = residual_block(convm,start_neurons * 16)
convm = residual_block(convm,start_neurons * 16)
convm = Activation('swish')(convm)

# 6 -> 12
deconv4 = Conv2DTranspose(start_neurons * 8, (3, 3), strides=(2, 2
),
padding="same",kernel_initializer=custom
_glorot)(convm)
uconv4 = concatenate([deconv4, conv4])
uconv4 = Dropout(DropoutRatio/2,seed=1537315160)(uconv4)
#prob = 1 - (DropoutRatio/2)
#uconv4 = Lambda(dropconnect,arguments={"prob":prob})(uconv4)
uconv4 = Conv2D(start_neurons * 8, (3, 3), activation=None, paddin
g="same")(uconv4)
uconv4 = residual_block(uconv4,start_neurons * 8)
uconv4 = residual_block(uconv4,start_neurons * 8)
uconv4 = Activation('swish')(uconv4)

# 12 -> 25
deconv3 = Conv2DTranspose(start_neurons * 4, (3, 3), strides=(2, 2

```



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),
                                padding="valid",kernel_initializer=custo
m_glorot)(uconv4)
    uconv3 = concatenate([deconv3, conv3])
    uconv3 = Dropout(DropoutRatio/2,seed=1537315160)(uconv3)
    #prob = 1 - (DropoutRatio/2)
    #uconv3 = Lambda(dropconnect,arguments={"prob":prob})(uconv3)
    uconv3 = Conv2D(start_neurons * 4, (3, 3), activation=None,
                    padding="same",kernel_initializer=custom_glorot)(u
conv3)
    uconv3 = residual_block(uconv3,start_neurons * 4)
    uconv3 = residual_block(uconv3,start_neurons * 4)
    uconv3 = Activation('swish')(uconv3)

    # 25 -> 50
    deconv2 = Conv2DTranspose(start_neurons * 2, (3, 3), strides=(2, 2
),
                                padding="same",kernel_initializer=custom
_glorot)(uconv3)
    uconv2 = concatenate([deconv2, conv2])
    uconv2 = Dropout(DropoutRatio/2,seed=1537315160)(uconv2)
    #prob = 1 - (DropoutRatio/2)
    #uconv2 = Lambda(dropconnect,arguments={"prob":prob})(uconv2)
    uconv2 = Conv2D(start_neurons * 2, (3, 3), activation=None,
                    padding="same",kernel_initializer=custom_glorot)(u
conv2)
    uconv2 = residual_block(uconv2,start_neurons * 2)
    uconv2 = residual_block(uconv2,start_neurons * 2)
    uconv2 = Activation('swish')(uconv2)

    # 50 -> 101
    deconv1 = Conv2DTranspose(start_neurons * 1, (3, 3), strides=(2, 2
),
                                padding="valid",kernel_initializer=custo
m_glorot)(uconv2)
    uconv1 = concatenate([deconv1, conv1])
    uconv1 = Dropout(DropoutRatio/2,seed=1537315160)(uconv1)
    #prob = 1 - (DropoutRatio/2)
    #uconv1 = Lambda(dropconnect,arguments={"prob":prob})(uconv1)
    uconv1 = Conv2D(start_neurons * 1, (3, 3), activation=None,
                    padding="same",kernel_initializer=custom_glorot)(u
conv1)
    uconv1 = residual_block(uconv1,start_neurons * 1)
    uconv1 = residual_block(uconv1,start_neurons * 1)
    uconv1 = Activation('swish')(uconv1)

    #uconv1 = Dropout(DropoutRatio/4)(uconv1)
    prob = 1 - (DropoutRatio/4)
    uconv1 = Lambda(dropconnect,arguments={"prob":prob})(uconv1)
    output_layer = Conv2D(1, (1,1), padding="same",

```

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activation="sigmoid",kernel_initializer=cust
om_glorot)(uconv1)

    return output_layer

```

Main

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In [13]: plt.style.use('seaborn-white')
sns.set_style("white")
%matplotlib inline

```

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In [14]: # Set all seeds and states for reproducibel
# results can be further optimized if
# a state object is saved and used
#set_random(1537315160)
#Initialize Image dimension Variables
img_size_ori = 101
img_size_target = 101
# Set Directory to grab from (needed when making predictions)

# Load in the train images and their masks for the training of models
x_train2 = np.load("x_train2.npy")
x_valid = np.load("x_valid.npy")
y_train2 = np.load("y_train2.npy")
y_valid = np.load("y_valid.npy")
print("Train Data:")
print("X: ",x_train2.shape,"Y: ",y_train2.shape)
print("Validation Data:")
print("X: ",x_valid.shape,"Y: ",y_valid.shape)
# add swish to list of string options in activation
# Needed for Keras
get_custom_objects().update({"swish": swish})

```

Train Data:

X: (6400, 101, 101, 2) Y: (6400, 101, 101, 1)

Validation Data:

X: (800, 101, 101, 2) Y: (800, 101, 101, 1)

```
In [15]: # Build the model then compile it using our custom metric
input_layer = Input((img_size_target, img_size_target, 2))
output_layer = build_model(input_layer, 16,0.6)
model = Model(input_layer, output_layer)
# Optimize optimizer
adam_opt = optimizers.Adam(lr=0.001,
                           beta_1=0.9,beta_2=0.999,
                           epsilon=None,
                           amsgrad=False,clipnorm=1.0
                           )
#sgd_opt = optimizers.SGD(lr=0.005)
model.compile(loss="binary_crossentropy", optimizer=adam_opt, metrics=
[my_iou_metric])
#model.summary()
```

```
In [16]: # Call backs
# EarlyStopping: will stop after 20 epochs of no change in iou metric
# ReduceLRonPlateau: will reduce learning rate by 0.2 after 5 epochs of
no change in iou metric
early_stopping = EarlyStopping(monitor='val_my_iou_metric', mode = 'ma
x',
                                patience=88, verbose=1)

reduce_lr = ReduceLRonPlateau(monitor='val_my_iou_metric', mode = 'max
',factor=0.97,
                                patience=10, min_lr=0, verbose=1)

# Save best model according to iou metric
model_checkpoint = ModelCheckpoint("./unet_best_base_squeeze_07.model"
,monitor='val_my_iou_metric',
                                mode = 'max', save_best_only=True,
verbose=1)

# Declare number of epochs and batch size
epochs = 600
#epochs = 1
batch_size = 32
# Train Model and set to history variable for graphing purposes
# Setting Shuffle should continue to ensure reproducibility in
# later trials
history = model.fit(x_train2,
                    y_train2,
                    validation_data=[x_valid, y_valid],
                    epochs=epochs,
                    shuffle=True,
                    batch_size=batch_size,
                    callbacks=[model_checkpoint, reduce_lr],
                    verbose=1
                    )
```

Train on 6400 samples, validate on 800 samples

Epoch 1/600

6400/6400 [=====] - 61s 10ms/step - loss: 0.3161 - my_iou_metric: 0.3824 - val_loss: 0.3048 - val_my_iou_metric: 0.5815

Epoch 00001: val_my_iou_metric improved from -inf to 0.58150, saving model to ./unet_best_base_squeeze_07.model

Epoch 2/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.2280 - my_iou_metric: 0.5565 - val_loss: 0.2900 - val_my_iou_metric: 0.4545

Epoch 00002: val_my_iou_metric did not improve from 0.58150

Epoch 3/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.2020 - my_iou_metric: 0.6008 - val_loss: 0.2098 - val_my_iou_metric: 0.6021

Epoch 00003: val_my_iou_metric improved from 0.58150 to 0.60213, saving model to ./UNET_best_base_squeeze_07.model

Epoch 4/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.1873 - my_iou_metric: 0.6261 - val_loss: 0.2609 - val_my_iou_metric: 0.6694

Epoch 00004: val_my_iou_metric improved from 0.60213 to 0.66938, saving model to ./UNET_best_base_squeeze_07.model

Epoch 5/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.1779 - my_iou_metric: 0.6490 - val_loss: 0.1960 - val_my_iou_metric: 0.6323

Epoch 00005: val_my_iou_metric did not improve from 0.66938

Epoch 6/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.1661 - my_iou_metric: 0.6634 - val_loss: 0.1873 - val_my_iou_metric: 0.6765

Epoch 00006: val_my_iou_metric improved from 0.66938 to 0.67650, saving model to ./UNET_best_base_squeeze_07.model

Epoch 7/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.1524 - my_iou_metric: 0.6893 - val_loss: 0.1735 - val_my_iou_metric: 0.6818

Epoch 00007: val_my_iou_metric improved from 0.67650 to 0.68175, saving model to ./UNET_best_base_squeeze_07.model

Epoch 8/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.1496 - my_iou_metric: 0.6952 - val_loss: 0.1676 - val_my_iou_metric: 0.6957

Epoch 00008: val_my_iou_metric improved from 0.68175 to 0.69575, saving model to ./UNET_best_base_squeeze_07.model

Epoch 9/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.1439 - my_iou_metric: 0.7033 - val_loss: 0.1861 - val_my_iou_metric: 0.6305

Epoch 00009: val_my_iou_metric did not improve from 0.69575

Epoch 10/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.1332 - my_iou_metric: 0.7185 - val_loss: 0.1462 - val_my_iou_metric:

0.7244

Epoch 00010: val_my_iou_metric improved from 0.69575 to 0.72437, saving model to ./unet_best_base_squeeze_07.model

Epoch 11/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1378 - my_iou_metric: 0.7212 - val_loss: 0.1606 - val_my_iou_metric: 0.6950

Epoch 00011: val_my_iou_metric did not improve from 0.72437

Epoch 12/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1307 - my_iou_metric: 0.7293 - val_loss: 0.1396 - val_my_iou_metric: 0.7207

Epoch 00012: val_my_iou_metric did not improve from 0.72437

Epoch 13/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1253 - my_iou_metric: 0.7366 - val_loss: 0.1446 - val_my_iou_metric: 0.7017

Epoch 00013: val_my_iou_metric did not improve from 0.72437

Epoch 14/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1288 - my_iou_metric: 0.7324 - val_loss: 0.1972 - val_my_iou_metric: 0.6771

Epoch 00014: val_my_iou_metric did not improve from 0.72437

Epoch 15/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1205 - my_iou_metric: 0.7345 - val_loss: 0.1600 - val_my_iou_metric: 0.7076

Epoch 00015: val_my_iou_metric did not improve from 0.72437

Epoch 16/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1203 - my_iou_metric: 0.7480 - val_loss: 0.1475 - val_my_iou_metric: 0.7465

Epoch 00016: val_my_iou_metric improved from 0.72437 to 0.74650, saving model to ./unet_best_base_squeeze_07.model

Epoch 17/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1171 - my_iou_metric: 0.7474 - val_loss: 0.2154 - val_my_iou_metric: 0.6917

Epoch 00017: val_my_iou_metric did not improve from 0.74650

Epoch 18/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1165 - my_iou_metric: 0.7485 - val_loss: 0.1665 - val_my_iou_metric:

0.7101

Epoch 00018: val_my_iou_metric did not improve from 0.74650

Epoch 19/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1117 - my_iou_metric: 0.7541 - val_loss: 0.1364 - val_my_iou_metric: 0.7344

Epoch 00019: val_my_iou_metric did not improve from 0.74650

Epoch 20/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1059 - my_iou_metric: 0.7593 - val_loss: 0.1515 - val_my_iou_metric: 0.7587

Epoch 00020: val_my_iou_metric improved from 0.74650 to 0.75875, saving model to ./UNET_best_base_squeeze_07.model

Epoch 21/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1096 - my_iou_metric: 0.7596 - val_loss: 0.1372 - val_my_iou_metric: 0.7492

Epoch 00021: val_my_iou_metric did not improve from 0.75875

Epoch 22/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1052 - my_iou_metric: 0.7602 - val_loss: 0.1507 - val_my_iou_metric: 0.7316

Epoch 00022: val_my_iou_metric did not improve from 0.75875

Epoch 23/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1033 - my_iou_metric: 0.7610 - val_loss: 0.1796 - val_my_iou_metric: 0.7088

Epoch 00023: val_my_iou_metric did not improve from 0.75875

Epoch 24/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.1030 - my_iou_metric: 0.7604 - val_loss: 0.1332 - val_my_iou_metric: 0.7651

Epoch 00024: val_my_iou_metric improved from 0.75875 to 0.76513, saving model to ./UNET_best_base_squeeze_07.model

Epoch 25/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0931 - my_iou_metric: 0.7763 - val_loss: 0.1606 - val_my_iou_metric: 0.7735

Epoch 00025: val_my_iou_metric improved from 0.76513 to 0.77350, saving model to ./UNET_best_base_squeeze_07.model

Epoch 26/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

1003 - my_iou_metric: 0.7726 - val_loss: 0.2001 - val_my_iou_metric:
0.7189

Epoch 00026: val_my_iou_metric did not improve from 0.77350

Epoch 27/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0951 - my_iou_metric: 0.7755 - val_loss: 0.1259 - val_my_iou_metric:
0.7702

Epoch 00027: val_my_iou_metric did not improve from 0.77350

Epoch 28/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0930 - my_iou_metric: 0.7749 - val_loss: 0.1401 - val_my_iou_metric:
0.7631

Epoch 00028: val_my_iou_metric did not improve from 0.77350

Epoch 29/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0892 - my_iou_metric: 0.7800 - val_loss: 0.1453 - val_my_iou_metric:
0.7555

Epoch 00029: val_my_iou_metric did not improve from 0.77350

Epoch 30/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0891 - my_iou_metric: 0.7779 - val_loss: 0.2092 - val_my_iou_metric:
0.7151

Epoch 00030: val_my_iou_metric did not improve from 0.77350

Epoch 31/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0864 - my_iou_metric: 0.7829 - val_loss: 0.1292 - val_my_iou_metric:
0.7530

Epoch 00031: val_my_iou_metric did not improve from 0.77350

Epoch 32/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0816 - my_iou_metric: 0.7865 - val_loss: 0.1813 - val_my_iou_metric:
0.7019

Epoch 00032: val_my_iou_metric did not improve from 0.77350

Epoch 33/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0765 - my_iou_metric: 0.7943 - val_loss: 0.1429 - val_my_iou_metric:
0.7648

Epoch 00033: val_my_iou_metric did not improve from 0.77350

Epoch 34/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0794 - my_iou_metric: 0.7919 - val_loss: 0.1478 - val_my_iou_metric:
0.7859

Epoch 00034: val_my_iou_metric improved from 0.77350 to 0.78587, saving model to ./UNET_best_base_squeeze_07.model

Epoch 35/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0747 - my_iou_metric: 0.7980 - val_loss: 0.1461 - val_my_iou_metric: 0.7705

Epoch 00035: val_my_iou_metric did not improve from 0.78587

Epoch 36/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0693 - my_iou_metric: 0.8027 - val_loss: 0.1932 - val_my_iou_metric: 0.7596

Epoch 00036: val_my_iou_metric did not improve from 0.78587

Epoch 37/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0724 - my_iou_metric: 0.8007 - val_loss: 0.1911 - val_my_iou_metric: 0.7477

Epoch 00037: val_my_iou_metric did not improve from 0.78587

Epoch 38/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0756 - my_iou_metric: 0.7977 - val_loss: 0.1644 - val_my_iou_metric: 0.7624

Epoch 00038: val_my_iou_metric did not improve from 0.78587

Epoch 39/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0688 - my_iou_metric: 0.8051 - val_loss: 0.1276 - val_my_iou_metric: 0.7749

Epoch 00039: val_my_iou_metric did not improve from 0.78587

Epoch 40/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0708 - my_iou_metric: 0.8068 - val_loss: 0.1803 - val_my_iou_metric: 0.7171

Epoch 00040: val_my_iou_metric did not improve from 0.78587

Epoch 41/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0660 - my_iou_metric: 0.7988 - val_loss: 0.1392 - val_my_iou_metric: 0.7761

Epoch 00041: val_my_iou_metric did not improve from 0.78587

Epoch 42/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0692 - my_iou_metric: 0.8016 - val_loss: 0.2002 - val_my_iou_metric: 0.7262

Epoch 00042: val_my_iou_metric did not improve from 0.78587
Epoch 43/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0621 - my_iou_metric: 0.8068 - val_loss: 0.2519 - val_my_iou_metric: 0.7141

Epoch 00043: val_my_iou_metric did not improve from 0.78587
Epoch 44/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0636 - my_iou_metric: 0.8089 - val_loss: 0.1703 - val_my_iou_metric: 0.7780

Epoch 00044: val_my_iou_metric did not improve from 0.78587

Epoch 00044: ReduceLROnPlateau reducing learning rate to 0.0009700000460725278.
Epoch 45/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0678 - my_iou_metric: 0.8049 - val_loss: 0.1626 - val_my_iou_metric: 0.7774

Epoch 00045: val_my_iou_metric did not improve from 0.78587
Epoch 46/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0610 - my_iou_metric: 0.8090 - val_loss: 0.2189 - val_my_iou_metric: 0.7536

Epoch 00046: val_my_iou_metric did not improve from 0.78587
Epoch 47/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0587 - my_iou_metric: 0.8132 - val_loss: 0.1711 - val_my_iou_metric: 0.7725

Epoch 00047: val_my_iou_metric did not improve from 0.78587
Epoch 48/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0599 - my_iou_metric: 0.8107 - val_loss: 0.1727 - val_my_iou_metric: 0.7691

Epoch 00048: val_my_iou_metric did not improve from 0.78587
Epoch 49/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0577 - my_iou_metric: 0.8188 - val_loss: 0.2370 - val_my_iou_metric: 0.7587

Epoch 00049: val_my_iou_metric did not improve from 0.78587
Epoch 50/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0593 - my_iou_metric: 0.8130 - val_loss: 0.2004 - val_my_iou_metric: 0.7594

Epoch 00050: val_my_iou_metric did not improve from 0.78587
Epoch 51/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0614 - my_iou_metric: 0.8136 - val_loss: 0.1912 - val_my_iou_metric: 0.7524

Epoch 00051: val_my_iou_metric did not improve from 0.78587
Epoch 52/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0573 - my_iou_metric: 0.8197 - val_loss: 0.1299 - val_my_iou_metric: 0.7830

Epoch 00052: val_my_iou_metric did not improve from 0.78587
Epoch 53/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0547 - my_iou_metric: 0.8229 - val_loss: 0.1827 - val_my_iou_metric: 0.7915

Epoch 00053: val_my_iou_metric improved from 0.78587 to 0.79150, saving model to ./UNET_best_base_squeeze_07.model
Epoch 54/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0564 - my_iou_metric: 0.8190 - val_loss: 0.1584 - val_my_iou_metric: 0.7668

Epoch 00054: val_my_iou_metric did not improve from 0.79150
Epoch 55/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0544 - my_iou_metric: 0.8210 - val_loss: 0.2211 - val_my_iou_metric: 0.7618

Epoch 00055: val_my_iou_metric did not improve from 0.79150
Epoch 56/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0513 - my_iou_metric: 0.8297 - val_loss: 0.1525 - val_my_iou_metric: 0.7871

Epoch 00056: val_my_iou_metric did not improve from 0.79150
Epoch 57/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0534 - my_iou_metric: 0.8250 - val_loss: 0.1788 - val_my_iou_metric: 0.7462

Epoch 00057: val_my_iou_metric did not improve from 0.79150
Epoch 58/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0597 - my_iou_metric: 0.8188 - val_loss: 0.1813 - val_my_iou_metric: 0.7851

Epoch 00058: val_my_iou_metric did not improve from 0.79150
Epoch 59/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0533 - my_iou_metric: 0.8270 - val_loss: 0.1702 - val_my_iou_metric: 0.7554

Epoch 00059: val_my_iou_metric did not improve from 0.79150
Epoch 60/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0524 - my_iou_metric: 0.8292 - val_loss: 0.1751 - val_my_iou_metric: 0.7565

Epoch 00060: val_my_iou_metric did not improve from 0.79150
Epoch 61/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0501 - my_iou_metric: 0.8298 - val_loss: 0.1791 - val_my_iou_metric: 0.7627

Epoch 00061: val_my_iou_metric did not improve from 0.79150
Epoch 62/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0515 - my_iou_metric: 0.8276 - val_loss: 0.1383 - val_my_iou_metric: 0.7652

Epoch 00062: val_my_iou_metric did not improve from 0.79150
Epoch 63/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0520 - my_iou_metric: 0.8250 - val_loss: 0.1759 - val_my_iou_metric: 0.7844

Epoch 00063: val_my_iou_metric did not improve from 0.79150

Epoch 00063: ReduceLROnPlateau reducing learning rate to 0.000940900050336495.
Epoch 64/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0532 - my_iou_metric: 0.8317 - val_loss: 0.1855 - val_my_iou_metric: 0.7682

Epoch 00064: val_my_iou_metric did not improve from 0.79150
Epoch 65/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0472 - my_iou_metric: 0.8358 - val_loss: 0.1848 - val_my_iou_metric: 0.7536

Epoch 00065: val_my_iou_metric did not improve from 0.79150
Epoch 66/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0465 - my_iou_metric: 0.8315 - val_loss: 0.1609 - val_my_iou_metric: 0.7641

Epoch 00066: val_my_iou_metric did not improve from 0.79150
Epoch 67/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0515 - my_iou_metric: 0.8287 - val_loss: 0.1721 - val_my_iou_metric: 0.7622

Epoch 00067: val_my_iou_metric did not improve from 0.79150
Epoch 68/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0506 - my_iou_metric: 0.8299 - val_loss: 0.1895 - val_my_iou_metric: 0.7447

Epoch 00068: val_my_iou_metric did not improve from 0.79150
Epoch 69/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0486 - my_iou_metric: 0.8286 - val_loss: 0.1777 - val_my_iou_metric: 0.7749

Epoch 00069: val_my_iou_metric did not improve from 0.79150
Epoch 70/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0471 - my_iou_metric: 0.8369 - val_loss: 0.1904 - val_my_iou_metric: 0.7689

Epoch 00070: val_my_iou_metric did not improve from 0.79150
Epoch 71/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0437 - my_iou_metric: 0.8370 - val_loss: 0.2017 - val_my_iou_metric: 0.7616

Epoch 00071: val_my_iou_metric did not improve from 0.79150
Epoch 72/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0469 - my_iou_metric: 0.8366 - val_loss: 0.1681 - val_my_iou_metric: 0.7709

Epoch 00072: val_my_iou_metric did not improve from 0.79150
Epoch 73/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0488 - my_iou_metric: 0.8311 - val_loss: 0.1480 - val_my_iou_metric: 0.7834

Epoch 00073: val_my_iou_metric did not improve from 0.79150

Epoch 00073: ReduceLROnPlateau reducing learning rate to 0.000912673061247915.

Epoch 74/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0447 - my_iou_metric: 0.8423 - val_loss: 0.1955 - val_my_iou_metric:

0.7646

Epoch 00074: val_my_iou_metric did not improve from 0.79150

Epoch 75/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0421 - my_iou_metric: 0.8427 - val_loss: 0.1452 - val_my_iou_metric: 0.7899

Epoch 00075: val_my_iou_metric did not improve from 0.79150

Epoch 76/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0407 - my_iou_metric: 0.8447 - val_loss: 0.1659 - val_my_iou_metric: 0.7875

Epoch 00076: val_my_iou_metric did not improve from 0.79150

Epoch 77/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0447 - my_iou_metric: 0.8400 - val_loss: 0.1720 - val_my_iou_metric: 0.7701

Epoch 00077: val_my_iou_metric did not improve from 0.79150

Epoch 78/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0440 - my_iou_metric: 0.8404 - val_loss: 0.1956 - val_my_iou_metric: 0.7804

Epoch 00078: val_my_iou_metric did not improve from 0.79150

Epoch 79/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0453 - my_iou_metric: 0.8375 - val_loss: 0.1533 - val_my_iou_metric: 0.7459

Epoch 00079: val_my_iou_metric did not improve from 0.79150

Epoch 80/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0519 - my_iou_metric: 0.8289 - val_loss: 0.1487 - val_my_iou_metric: 0.7656

Epoch 00080: val_my_iou_metric did not improve from 0.79150

Epoch 81/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0422 - my_iou_metric: 0.8402 - val_loss: 0.1898 - val_my_iou_metric: 0.7884

Epoch 00081: val_my_iou_metric did not improve from 0.79150

Epoch 82/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0416 - my_iou_metric: 0.8426 - val_loss: 0.2008 - val_my_iou_metric: 0.7781

Epoch 00082: val_my_iou_metric did not improve from 0.79150
Epoch 83/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0436 - my_iou_metric: 0.8383 - val_loss: 0.2784 - val_my_iou_metric: 0.7624

Epoch 00083: val_my_iou_metric did not improve from 0.79150

Epoch 00083: ReduceLROnPlateau reducing learning rate to 0.0008852928807027637.
Epoch 84/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0394 - my_iou_metric: 0.8408 - val_loss: 0.2193 - val_my_iou_metric: 0.7828

Epoch 00084: val_my_iou_metric did not improve from 0.79150
Epoch 85/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0442 - my_iou_metric: 0.8394 - val_loss: 0.1607 - val_my_iou_metric: 0.7854

Epoch 00085: val_my_iou_metric did not improve from 0.79150
Epoch 86/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0398 - my_iou_metric: 0.8442 - val_loss: 0.2361 - val_my_iou_metric: 0.7615

Epoch 00086: val_my_iou_metric did not improve from 0.79150
Epoch 87/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0425 - my_iou_metric: 0.8411 - val_loss: 0.1618 - val_my_iou_metric: 0.7962

Epoch 00087: val_my_iou_metric improved from 0.79150 to 0.79625, saving model to ./unet_best_base_squeeze_07.model
Epoch 88/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0392 - my_iou_metric: 0.8488 - val_loss: 0.1525 - val_my_iou_metric: 0.7924

Epoch 00088: val_my_iou_metric did not improve from 0.79625
Epoch 89/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0417 - my_iou_metric: 0.8456 - val_loss: 0.1659 - val_my_iou_metric: 0.7651

Epoch 00089: val_my_iou_metric did not improve from 0.79625
Epoch 90/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0421 - my_iou_metric: 0.8467 - val_loss: 0.1473 - val_my_iou_metric:

0.7919

Epoch 00090: val_my_iou_metric did not improve from 0.79625

Epoch 91/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0381 - my_iou_metric: 0.8490 - val_loss: 0.1611 - val_my_iou_metric: 0.7914

Epoch 00091: val_my_iou_metric did not improve from 0.79625

Epoch 92/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0411 - my_iou_metric: 0.8425 - val_loss: 0.1789 - val_my_iou_metric: 0.7970

Epoch 00092: val_my_iou_metric improved from 0.79625 to 0.79700, saving model to ./UNET_best_base_squeeze_07.model

Epoch 93/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0413 - my_iou_metric: 0.8482 - val_loss: 0.1510 - val_my_iou_metric: 0.7910

Epoch 00093: val_my_iou_metric did not improve from 0.79700

Epoch 94/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0381 - my_iou_metric: 0.8516 - val_loss: 0.1550 - val_my_iou_metric: 0.7829

Epoch 00094: val_my_iou_metric did not improve from 0.79700

Epoch 95/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0402 - my_iou_metric: 0.8451 - val_loss: 0.1838 - val_my_iou_metric: 0.7886

Epoch 00095: val_my_iou_metric did not improve from 0.79700

Epoch 96/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0372 - my_iou_metric: 0.8505 - val_loss: 0.1680 - val_my_iou_metric: 0.7893

Epoch 00096: val_my_iou_metric did not improve from 0.79700

Epoch 97/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0376 - my_iou_metric: 0.8470 - val_loss: 0.2363 - val_my_iou_metric: 0.7694

Epoch 00097: val_my_iou_metric did not improve from 0.79700

Epoch 98/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0357 - my_iou_metric: 0.8507 - val_loss: 0.1460 - val_my_iou_metric: 0.7985

Epoch 00098: val_my_iou_metric improved from 0.79700 to 0.79850, saving model to ./UNET_best_base_squeeze_07.model

Epoch 99/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0391 - my_iou_metric: 0.8493 - val_loss: 0.1602 - val_my_iou_metric: 0.7937

Epoch 00099: val_my_iou_metric did not improve from 0.79850

Epoch 100/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0396 - my_iou_metric: 0.8458 - val_loss: 0.1681 - val_my_iou_metric: 0.7861

Epoch 00100: val_my_iou_metric did not improve from 0.79850

Epoch 101/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0358 - my_iou_metric: 0.8516 - val_loss: 0.2118 - val_my_iou_metric: 0.7987

Epoch 00101: val_my_iou_metric improved from 0.79850 to 0.79875, saving model to ./UNET_best_base_squeeze_07.model

Epoch 102/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0341 - my_iou_metric: 0.8593 - val_loss: 0.1845 - val_my_iou_metric: 0.8045

Epoch 00102: val_my_iou_metric improved from 0.79875 to 0.80450, saving model to ./UNET_best_base_squeeze_07.model

Epoch 103/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0340 - my_iou_metric: 0.8588 - val_loss: 0.1735 - val_my_iou_metric: 0.7870

Epoch 00103: val_my_iou_metric did not improve from 0.80450

Epoch 104/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0379 - my_iou_metric: 0.8470 - val_loss: 0.2051 - val_my_iou_metric: 0.7818

Epoch 00104: val_my_iou_metric did not improve from 0.80450

Epoch 105/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0373 - my_iou_metric: 0.8517 - val_loss: 0.1841 - val_my_iou_metric: 0.7796

Epoch 00105: val_my_iou_metric did not improve from 0.80450

Epoch 106/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0389 - my_iou_metric: 0.8526 - val_loss: 0.2021 - val_my_iou_metric:

0.7876

Epoch 00106: val_my_iou_metric did not improve from 0.80450

Epoch 107/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0367 - my_iou_metric: 0.8546 - val_loss: 0.1794 - val_my_iou_metric: 0.7988

Epoch 00107: val_my_iou_metric did not improve from 0.80450

Epoch 108/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0353 - my_iou_metric: 0.8552 - val_loss: 0.1997 - val_my_iou_metric: 0.7879

Epoch 00108: val_my_iou_metric did not improve from 0.80450

Epoch 109/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0347 - my_iou_metric: 0.8550 - val_loss: 0.1821 - val_my_iou_metric: 0.7855

Epoch 00109: val_my_iou_metric did not improve from 0.80450

Epoch 110/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0362 - my_iou_metric: 0.8554 - val_loss: 0.1629 - val_my_iou_metric: 0.7688

Epoch 00110: val_my_iou_metric did not improve from 0.80450

Epoch 111/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0381 - my_iou_metric: 0.8489 - val_loss: 0.1891 - val_my_iou_metric: 0.7784

Epoch 00111: val_my_iou_metric did not improve from 0.80450

Epoch 112/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0362 - my_iou_metric: 0.8543 - val_loss: 0.2127 - val_my_iou_metric: 0.7884

Epoch 00112: val_my_iou_metric did not improve from 0.80450

Epoch 00112: ReduceLROnPlateau reducing learning rate to 0.0008587341010570526.

Epoch 113/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0340 - my_iou_metric: 0.8574 - val_loss: 0.2244 - val_my_iou_metric: 0.7677

Epoch 00113: val_my_iou_metric did not improve from 0.80450

Epoch 114/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0370 - my_iou_metric: 0.8531 - val_loss: 0.2073 - val_my_iou_metric:
0.7794

Epoch 00114: val_my_iou_metric did not improve from 0.80450

Epoch 115/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0318 - my_iou_metric: 0.8630 - val_loss: 0.2114 - val_my_iou_metric:
0.7909

Epoch 00115: val_my_iou_metric did not improve from 0.80450

Epoch 116/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0311 - my_iou_metric: 0.8629 - val_loss: 0.1973 - val_my_iou_metric:
0.8041

Epoch 00116: val_my_iou_metric did not improve from 0.80450

Epoch 117/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0324 - my_iou_metric: 0.8609 - val_loss: 0.1867 - val_my_iou_metric:
0.7894

Epoch 00117: val_my_iou_metric did not improve from 0.80450

Epoch 118/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0327 - my_iou_metric: 0.8569 - val_loss: 0.2092 - val_my_iou_metric:
0.7950

Epoch 00118: val_my_iou_metric did not improve from 0.80450

Epoch 119/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0280 - my_iou_metric: 0.8694 - val_loss: 0.2081 - val_my_iou_metric:
0.7732

Epoch 00119: val_my_iou_metric did not improve from 0.80450

Epoch 120/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0351 - my_iou_metric: 0.8594 - val_loss: 0.1952 - val_my_iou_metric:
0.8055

Epoch 00120: val_my_iou_metric improved from 0.80450 to 0.80550, sav
ing model to ./unet_best_base_squeeze_07.model

Epoch 121/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0321 - my_iou_metric: 0.8612 - val_loss: 0.2090 - val_my_iou_metric:
0.8031

Epoch 00121: val_my_iou_metric did not improve from 0.80550

Epoch 122/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0364 - my_iou_metric: 0.8491 - val_loss: 0.3187 - val_my_iou_metric:

0.7660

Epoch 00122: val_my_iou_metric did not improve from 0.80550

Epoch 123/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0316 - my_iou_metric: 0.8617 - val_loss: 0.1888 - val_my_iou_metric: 0.7919

Epoch 00123: val_my_iou_metric did not improve from 0.80550

Epoch 124/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0375 - my_iou_metric: 0.8550 - val_loss: 0.1354 - val_my_iou_metric: 0.7756

Epoch 00124: val_my_iou_metric did not improve from 0.80550

Epoch 125/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0344 - my_iou_metric: 0.8584 - val_loss: 0.2072 - val_my_iou_metric: 0.7939

Epoch 00125: val_my_iou_metric did not improve from 0.80550

Epoch 126/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0294 - my_iou_metric: 0.8668 - val_loss: 0.2047 - val_my_iou_metric: 0.7819

Epoch 00126: val_my_iou_metric did not improve from 0.80550

Epoch 127/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0321 - my_iou_metric: 0.8612 - val_loss: 0.2080 - val_my_iou_metric: 0.7849

Epoch 00127: val_my_iou_metric did not improve from 0.80550

Epoch 128/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0329 - my_iou_metric: 0.8607 - val_loss: 0.2262 - val_my_iou_metric: 0.7985

Epoch 00128: val_my_iou_metric did not improve from 0.80550

Epoch 129/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0284 - my_iou_metric: 0.8670 - val_loss: 0.2112 - val_my_iou_metric: 0.7896

Epoch 00129: val_my_iou_metric did not improve from 0.80550

Epoch 130/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0322 - my_iou_metric: 0.8573 - val_loss: 0.2125 - val_my_iou_metric: 0.7843

Epoch 00130: val_my_iou_metric did not improve from 0.80550

Epoch 00130: ReduceLROnPlateau reducing learning rate to 0.0008329721051268279.

Epoch 131/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0342 - my_iou_metric: 0.8576 - val_loss: 0.1645 - val_my_iou_metric: 0.8017

Epoch 00131: val_my_iou_metric did not improve from 0.80550

Epoch 132/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0317 - my_iou_metric: 0.8610 - val_loss: 0.2231 - val_my_iou_metric: 0.7964

Epoch 00132: val_my_iou_metric did not improve from 0.80550

Epoch 133/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0305 - my_iou_metric: 0.8657 - val_loss: 0.1483 - val_my_iou_metric: 0.7732

Epoch 00133: val_my_iou_metric did not improve from 0.80550

Epoch 134/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0260 - my_iou_metric: 0.8731 - val_loss: 0.2455 - val_my_iou_metric: 0.7940

Epoch 00134: val_my_iou_metric did not improve from 0.80550

Epoch 135/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0297 - my_iou_metric: 0.8644 - val_loss: 0.2228 - val_my_iou_metric: 0.7904

Epoch 00135: val_my_iou_metric did not improve from 0.80550

Epoch 136/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0316 - my_iou_metric: 0.8612 - val_loss: 0.2034 - val_my_iou_metric: 0.7749

Epoch 00136: val_my_iou_metric did not improve from 0.80550

Epoch 137/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0314 - my_iou_metric: 0.8629 - val_loss: 0.1607 - val_my_iou_metric: 0.7811

Epoch 00137: val_my_iou_metric did not improve from 0.80550

Epoch 138/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0304 - my_iou_metric: 0.8671 - val_loss: 0.2292 - val_my_iou_metric: 0.7717

Epoch 00138: val_my_iou_metric did not improve from 0.80550
Epoch 139/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0324 - my_iou_metric: 0.8625 - val_loss: 0.2149 - val_my_iou_metric: 0.7579

Epoch 00139: val_my_iou_metric did not improve from 0.80550
Epoch 140/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0289 - my_iou_metric: 0.8669 - val_loss: 0.2197 - val_my_iou_metric: 0.8066

Epoch 00140: val_my_iou_metric improved from 0.80550 to 0.80663, saving model to ./UNET_best_base_squeeze_07.model
Epoch 141/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0262 - my_iou_metric: 0.8715 - val_loss: 0.1925 - val_my_iou_metric: 0.8008

Epoch 00141: val_my_iou_metric did not improve from 0.80663
Epoch 142/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0278 - my_iou_metric: 0.8712 - val_loss: 0.2190 - val_my_iou_metric: 0.7948

Epoch 00142: val_my_iou_metric did not improve from 0.80663
Epoch 143/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0306 - my_iou_metric: 0.8666 - val_loss: 0.2140 - val_my_iou_metric: 0.8020

Epoch 00143: val_my_iou_metric did not improve from 0.80663
Epoch 144/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0327 - my_iou_metric: 0.8615 - val_loss: 0.1767 - val_my_iou_metric: 0.7789

Epoch 00144: val_my_iou_metric did not improve from 0.80663
Epoch 145/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0295 - my_iou_metric: 0.8635 - val_loss: 0.2292 - val_my_iou_metric: 0.7979

Epoch 00145: val_my_iou_metric did not improve from 0.80663
Epoch 146/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0267 - my_iou_metric: 0.8736 - val_loss: 0.2159 - val_my_iou_metric: 0.7984

Epoch 00146: val_my_iou_metric did not improve from 0.80663
Epoch 147/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0308 - my_iou_metric: 0.8681 - val_loss: 0.2548 - val_my_iou_metric: 0.7626

Epoch 00147: val_my_iou_metric did not improve from 0.80663
Epoch 148/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0339 - my_iou_metric: 0.8616 - val_loss: 0.1836 - val_my_iou_metric: 0.7730

Epoch 00148: val_my_iou_metric did not improve from 0.80663
Epoch 149/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0301 - my_iou_metric: 0.8634 - val_loss: 0.2242 - val_my_iou_metric: 0.7903

Epoch 00149: val_my_iou_metric did not improve from 0.80663
Epoch 150/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0292 - my_iou_metric: 0.8680 - val_loss: 0.1922 - val_my_iou_metric: 0.7766

Epoch 00150: val_my_iou_metric did not improve from 0.80663

Epoch 00150: ReduceLROnPlateau reducing learning rate to 0.0008079829532653093.

Epoch 151/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0296 - my_iou_metric: 0.8699 - val_loss: 0.2220 - val_my_iou_metric: 0.7834

Epoch 00151: val_my_iou_metric did not improve from 0.80663
Epoch 152/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0309 - my_iou_metric: 0.8636 - val_loss: 0.2418 - val_my_iou_metric: 0.7998

Epoch 00152: val_my_iou_metric did not improve from 0.80663
Epoch 153/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0277 - my_iou_metric: 0.8726 - val_loss: 0.1877 - val_my_iou_metric: 0.7908

Epoch 00153: val_my_iou_metric did not improve from 0.80663
Epoch 154/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0263 - my_iou_metric: 0.8734 - val_loss: 0.2101 - val_my_iou_metric: 0.7944

Epoch 00154: val_my_iou_metric did not improve from 0.80663
Epoch 155/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0250 - my_iou_metric: 0.8762 - val_loss: 0.2213 - val_my_iou_metric: 0.8024

Epoch 00155: val_my_iou_metric did not improve from 0.80663
Epoch 156/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0241 - my_iou_metric: 0.8779 - val_loss: 0.2081 - val_my_iou_metric: 0.7944

Epoch 00156: val_my_iou_metric did not improve from 0.80663
Epoch 157/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0254 - my_iou_metric: 0.8741 - val_loss: 0.2130 - val_my_iou_metric: 0.7965

Epoch 00157: val_my_iou_metric did not improve from 0.80663
Epoch 158/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0278 - my_iou_metric: 0.8704 - val_loss: 0.2308 - val_my_iou_metric: 0.8014

Epoch 00158: val_my_iou_metric did not improve from 0.80663
Epoch 159/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0282 - my_iou_metric: 0.8738 - val_loss: 0.2225 - val_my_iou_metric: 0.7926

Epoch 00159: val_my_iou_metric did not improve from 0.80663
Epoch 160/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0265 - my_iou_metric: 0.8721 - val_loss: 0.2256 - val_my_iou_metric: 0.7685

Epoch 00160: val_my_iou_metric did not improve from 0.80663

Epoch 00160: ReduceLROnPlateau reducing learning rate to 0.0007837434398243203.

Epoch 161/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0277 - my_iou_metric: 0.8758 - val_loss: 0.1664 - val_my_iou_metric: 0.7476

Epoch 00161: val_my_iou_metric did not improve from 0.80663
Epoch 162/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0265 - my_iou_metric: 0.8748 - val_loss: 0.1942 - val_my_iou_metric:

0.7948

Epoch 00162: val_my_iou_metric did not improve from 0.80663

Epoch 163/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0229 - my_iou_metric: 0.8801 - val_loss: 0.2186 - val_my_iou_metric: 0.7861

Epoch 00163: val_my_iou_metric did not improve from 0.80663

Epoch 164/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0237 - my_iou_metric: 0.8797 - val_loss: 0.3240 - val_my_iou_metric: 0.7941

Epoch 00164: val_my_iou_metric did not improve from 0.80663

Epoch 165/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0264 - my_iou_metric: 0.8756 - val_loss: 0.1855 - val_my_iou_metric: 0.7759

Epoch 00165: val_my_iou_metric did not improve from 0.80663

Epoch 166/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0335 - my_iou_metric: 0.8583 - val_loss: 0.2830 - val_my_iou_metric: 0.7754

Epoch 00166: val_my_iou_metric did not improve from 0.80663

Epoch 167/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0305 - my_iou_metric: 0.8704 - val_loss: 0.2132 - val_my_iou_metric: 0.7701

Epoch 00167: val_my_iou_metric did not improve from 0.80663

Epoch 168/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0269 - my_iou_metric: 0.8730 - val_loss: 0.2051 - val_my_iou_metric: 0.7759

Epoch 00168: val_my_iou_metric did not improve from 0.80663

Epoch 169/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0272 - my_iou_metric: 0.8749 - val_loss: 0.2159 - val_my_iou_metric: 0.7920

Epoch 00169: val_my_iou_metric did not improve from 0.80663

Epoch 170/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0265 - my_iou_metric: 0.8724 - val_loss: 0.2702 - val_my_iou_metric: 0.7850

Epoch 00170: val_my_iou_metric did not improve from 0.80663

Epoch 00170: ReduceLROnPlateau reducing learning rate to 0.0007602311496157199.

Epoch 171/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0265 - my_iou_metric: 0.8760 - val_loss: 0.1766 - val_my_iou_metric: 0.7954

Epoch 00171: val_my_iou_metric did not improve from 0.80663

Epoch 172/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0276 - my_iou_metric: 0.8734 - val_loss: 0.2581 - val_my_iou_metric: 0.7871

Epoch 00172: val_my_iou_metric did not improve from 0.80663

Epoch 173/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0242 - my_iou_metric: 0.8815 - val_loss: 0.1894 - val_my_iou_metric: 0.7915

Epoch 00173: val_my_iou_metric did not improve from 0.80663

Epoch 174/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0256 - my_iou_metric: 0.8787 - val_loss: 0.1987 - val_my_iou_metric: 0.8045

Epoch 00174: val_my_iou_metric did not improve from 0.80663

Epoch 175/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0213 - my_iou_metric: 0.8859 - val_loss: 0.2478 - val_my_iou_metric: 0.7981

Epoch 00175: val_my_iou_metric did not improve from 0.80663

Epoch 176/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0206 - my_iou_metric: 0.8895 - val_loss: 0.2518 - val_my_iou_metric: 0.7983

Epoch 00176: val_my_iou_metric did not improve from 0.80663

Epoch 177/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0229 - my_iou_metric: 0.8862 - val_loss: 0.2080 - val_my_iou_metric: 0.7836

Epoch 00177: val_my_iou_metric did not improve from 0.80663

Epoch 178/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0249 - my_iou_metric: 0.8780 - val_loss: 0.2446 - val_my_iou_metric: 0.7897

Epoch 00178: val_my_iou_metric did not improve from 0.80663
Epoch 179/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0274 - my_iou_metric: 0.8743 - val_loss: 0.1871 - val_my_iou_metric: 0.7881

Epoch 00179: val_my_iou_metric did not improve from 0.80663
Epoch 180/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0303 - my_iou_metric: 0.8681 - val_loss: 0.2136 - val_my_iou_metric: 0.7893

Epoch 00180: val_my_iou_metric did not improve from 0.80663

Epoch 00180: ReduceLROnPlateau reducing learning rate to 0.0007374242320656776.

Epoch 181/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0305 - my_iou_metric: 0.8707 - val_loss: 0.1950 - val_my_iou_metric: 0.7899

Epoch 00181: val_my_iou_metric did not improve from 0.80663
Epoch 182/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0260 - my_iou_metric: 0.8748 - val_loss: 0.1900 - val_my_iou_metric: 0.8040

Epoch 00182: val_my_iou_metric did not improve from 0.80663
Epoch 183/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0242 - my_iou_metric: 0.8791 - val_loss: 0.1823 - val_my_iou_metric: 0.7869

Epoch 00183: val_my_iou_metric did not improve from 0.80663
Epoch 184/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0265 - my_iou_metric: 0.8752 - val_loss: 0.2162 - val_my_iou_metric: 0.7959

Epoch 00184: val_my_iou_metric did not improve from 0.80663
Epoch 185/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0228 - my_iou_metric: 0.8821 - val_loss: 0.2544 - val_my_iou_metric: 0.7960

Epoch 00185: val_my_iou_metric did not improve from 0.80663
Epoch 186/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0231 - my_iou_metric: 0.8811 - val_loss: 0.2001 - val_my_iou_metric:

0.7976

Epoch 00186: val_my_iou_metric did not improve from 0.80663

Epoch 187/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0230 - my_iou_metric: 0.8818 - val_loss: 0.2034 - val_my_iou_metric: 0.7960

Epoch 00187: val_my_iou_metric did not improve from 0.80663

Epoch 188/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0222 - my_iou_metric: 0.8858 - val_loss: 0.2052 - val_my_iou_metric: 0.7931

Epoch 00188: val_my_iou_metric did not improve from 0.80663

Epoch 189/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0271 - my_iou_metric: 0.8784 - val_loss: 0.2345 - val_my_iou_metric: 0.7957

Epoch 00189: val_my_iou_metric did not improve from 0.80663

Epoch 190/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0231 - my_iou_metric: 0.8864 - val_loss: 0.2314 - val_my_iou_metric: 0.7955

Epoch 00190: val_my_iou_metric did not improve from 0.80663

Epoch 00190: ReduceLROnPlateau reducing learning rate to 0.0007153015141375363.

Epoch 191/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0242 - my_iou_metric: 0.8797 - val_loss: 0.3010 - val_my_iou_metric: 0.7874

Epoch 00191: val_my_iou_metric did not improve from 0.80663

Epoch 192/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0277 - my_iou_metric: 0.8744 - val_loss: 0.2243 - val_my_iou_metric: 0.7935

Epoch 00192: val_my_iou_metric did not improve from 0.80663

Epoch 193/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0217 - my_iou_metric: 0.8846 - val_loss: 0.2178 - val_my_iou_metric: 0.7975

Epoch 00193: val_my_iou_metric did not improve from 0.80663

Epoch 194/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0216 - my_iou_metric: 0.8827 - val_loss: 0.2012 - val_my_iou_metric:
0.7945

Epoch 00194: val_my_iou_metric did not improve from 0.80663

Epoch 195/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0209 - my_iou_metric: 0.8881 - val_loss: 0.2446 - val_my_iou_metric:
0.7979

Epoch 00195: val_my_iou_metric did not improve from 0.80663

Epoch 196/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0230 - my_iou_metric: 0.8831 - val_loss: 0.2474 - val_my_iou_metric:
0.7989

Epoch 00196: val_my_iou_metric did not improve from 0.80663

Epoch 197/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0198 - my_iou_metric: 0.8902 - val_loss: 0.2224 - val_my_iou_metric:
0.7939

Epoch 00197: val_my_iou_metric did not improve from 0.80663

Epoch 198/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0297 - my_iou_metric: 0.8762 - val_loss: 0.2504 - val_my_iou_metric:
0.8029

Epoch 00198: val_my_iou_metric did not improve from 0.80663

Epoch 199/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0279 - my_iou_metric: 0.8743 - val_loss: 0.2432 - val_my_iou_metric:
0.7942

Epoch 00199: val_my_iou_metric did not improve from 0.80663

Epoch 200/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0220 - my_iou_metric: 0.8876 - val_loss: 0.2681 - val_my_iou_metric:
0.8017

Epoch 00200: val_my_iou_metric did not improve from 0.80663

Epoch 00200: ReduceLROnPlateau reducing learning rate to 0.000693842
4438703805.

Epoch 201/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0214 - my_iou_metric: 0.8870 - val_loss: 0.2534 - val_my_iou_metric:
0.8008

Epoch 00201: val_my_iou_metric did not improve from 0.80663

Epoch 202/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0217 - my_iou_metric: 0.8863 - val_loss: 0.1851 - val_my_iou_metric:
0.8028

Epoch 00202: val_my_iou_metric did not improve from 0.80663
Epoch 203/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0231 - my_iou_metric: 0.8829 - val_loss: 0.2766 - val_my_iou_metric:
0.7828

Epoch 00203: val_my_iou_metric did not improve from 0.80663
Epoch 204/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0224 - my_iou_metric: 0.8850 - val_loss: 0.2716 - val_my_iou_metric:
0.7890

Epoch 00204: val_my_iou_metric did not improve from 0.80663
Epoch 205/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0243 - my_iou_metric: 0.8837 - val_loss: 0.2161 - val_my_iou_metric:
0.7989

Epoch 00205: val_my_iou_metric did not improve from 0.80663
Epoch 206/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0246 - my_iou_metric: 0.8811 - val_loss: 0.2447 - val_my_iou_metric:
0.8039

Epoch 00206: val_my_iou_metric did not improve from 0.80663
Epoch 207/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0208 - my_iou_metric: 0.8861 - val_loss: 0.2203 - val_my_iou_metric:
0.8052

Epoch 00207: val_my_iou_metric did not improve from 0.80663
Epoch 208/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0197 - my_iou_metric: 0.8893 - val_loss: 0.2609 - val_my_iou_metric:
0.7990

Epoch 00208: val_my_iou_metric did not improve from 0.80663
Epoch 209/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0195 - my_iou_metric: 0.8942 - val_loss: 0.2590 - val_my_iou_metric:
0.8076

Epoch 00209: val_my_iou_metric improved from 0.80663 to 0.80763, sav
ing model to ./UNET_best_base_squeeze_07.model
Epoch 210/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0187 - my_iou_metric: 0.8981 - val_loss: 0.2608 - val_my_iou_metric:
0.7926

Epoch 00210: val_my_iou_metric did not improve from 0.80763

Epoch 211/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0198 - my_iou_metric: 0.8961 - val_loss: 0.2381 - val_my_iou_metric:
0.8018

Epoch 00211: val_my_iou_metric did not improve from 0.80763

Epoch 212/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0184 - my_iou_metric: 0.8955 - val_loss: 0.2593 - val_my_iou_metric:
0.8033

Epoch 00212: val_my_iou_metric did not improve from 0.80763

Epoch 213/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0198 - my_iou_metric: 0.8926 - val_loss: 0.2454 - val_my_iou_metric:
0.8022

Epoch 00213: val_my_iou_metric did not improve from 0.80763

Epoch 214/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0239 - my_iou_metric: 0.8830 - val_loss: 0.2936 - val_my_iou_metric:
0.7731

Epoch 00214: val_my_iou_metric did not improve from 0.80763

Epoch 215/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0297 - my_iou_metric: 0.8705 - val_loss: 0.2322 - val_my_iou_metric:
0.7925

Epoch 00215: val_my_iou_metric did not improve from 0.80763

Epoch 216/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0279 - my_iou_metric: 0.8773 - val_loss: 0.1901 - val_my_iou_metric:
0.8014

Epoch 00216: val_my_iou_metric did not improve from 0.80763

Epoch 217/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0211 - my_iou_metric: 0.8846 - val_loss: 0.2506 - val_my_iou_metric:
0.7895

Epoch 00217: val_my_iou_metric did not improve from 0.80763

Epoch 218/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0217 - my_iou_metric: 0.8829 - val_loss: 0.2406 - val_my_iou_metric:
0.7927

Epoch 00218: val_my_iou_metric did not improve from 0.80763
Epoch 219/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0246 - my_iou_metric: 0.8854 - val_loss: 0.2327 - val_my_iou_metric: 0.7895

Epoch 00219: val_my_iou_metric did not improve from 0.80763

Epoch 00219: ReduceLROnPlateau reducing learning rate to 0.000673027146840468.

Epoch 220/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0201 - my_iou_metric: 0.8934 - val_loss: 0.2438 - val_my_iou_metric: 0.8009

Epoch 00220: val_my_iou_metric did not improve from 0.80763

Epoch 221/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0256 - my_iou_metric: 0.8841 - val_loss: 0.2390 - val_my_iou_metric: 0.7953

Epoch 00221: val_my_iou_metric did not improve from 0.80763

Epoch 222/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0190 - my_iou_metric: 0.8976 - val_loss: 0.2437 - val_my_iou_metric: 0.7956

Epoch 00222: val_my_iou_metric did not improve from 0.80763

Epoch 223/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0233 - my_iou_metric: 0.8898 - val_loss: 0.2202 - val_my_iou_metric: 0.7899

Epoch 00223: val_my_iou_metric did not improve from 0.80763

Epoch 224/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0205 - my_iou_metric: 0.8910 - val_loss: 0.2513 - val_my_iou_metric: 0.8015

Epoch 00224: val_my_iou_metric did not improve from 0.80763

Epoch 225/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0194 - my_iou_metric: 0.8909 - val_loss: 0.2621 - val_my_iou_metric: 0.8027

Epoch 00225: val_my_iou_metric did not improve from 0.80763

Epoch 226/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0212 - my_iou_metric: 0.8896 - val_loss: 0.2486 - val_my_iou_metric:

0.7940

Epoch 00226: val_my_iou_metric did not improve from 0.80763

Epoch 227/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0198 - my_iou_metric: 0.8959 - val_loss: 0.2592 - val_my_iou_metric: 0.7930

Epoch 00227: val_my_iou_metric did not improve from 0.80763

Epoch 228/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0212 - my_iou_metric: 0.8971 - val_loss: 0.2240 - val_my_iou_metric: 0.8056

Epoch 00228: val_my_iou_metric did not improve from 0.80763

Epoch 229/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0187 - my_iou_metric: 0.8972 - val_loss: 0.2264 - val_my_iou_metric: 0.8039

Epoch 00229: val_my_iou_metric did not improve from 0.80763

Epoch 00229: ReduceLROnPlateau reducing learning rate to 0.0006528363132383674.

Epoch 230/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0218 - my_iou_metric: 0.8926 - val_loss: 0.2019 - val_my_iou_metric: 0.7902

Epoch 00230: val_my_iou_metric did not improve from 0.80763

Epoch 231/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0232 - my_iou_metric: 0.8860 - val_loss: 0.2306 - val_my_iou_metric: 0.8046

Epoch 00231: val_my_iou_metric did not improve from 0.80763

Epoch 232/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0198 - my_iou_metric: 0.8959 - val_loss: 0.2411 - val_my_iou_metric: 0.8039

Epoch 00232: val_my_iou_metric did not improve from 0.80763

Epoch 233/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0221 - my_iou_metric: 0.8877 - val_loss: 0.2358 - val_my_iou_metric: 0.7694

Epoch 00233: val_my_iou_metric did not improve from 0.80763

Epoch 234/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0226 - my_iou_metric: 0.8875 - val_loss: 0.2612 - val_my_iou_metric:
0.7999

Epoch 00234: val_my_iou_metric did not improve from 0.80763

Epoch 235/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0191 - my_iou_metric: 0.8985 - val_loss: 0.2295 - val_my_iou_metric:
0.8113

Epoch 00235: val_my_iou_metric improved from 0.80763 to 0.81125, sav
ing model to ./UNET_best_base_squeeze_07.model

Epoch 236/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0188 - my_iou_metric: 0.8953 - val_loss: 0.2556 - val_my_iou_metric:
0.8064

Epoch 00236: val_my_iou_metric did not improve from 0.81125

Epoch 237/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0188 - my_iou_metric: 0.8988 - val_loss: 0.2427 - val_my_iou_metric:
0.7977

Epoch 00237: val_my_iou_metric did not improve from 0.81125

Epoch 238/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0175 - my_iou_metric: 0.9005 - val_loss: 0.2370 - val_my_iou_metric:
0.8070

Epoch 00238: val_my_iou_metric did not improve from 0.81125

Epoch 239/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0176 - my_iou_metric: 0.8989 - val_loss: 0.2257 - val_my_iou_metric:
0.8071

Epoch 00239: val_my_iou_metric did not improve from 0.81125

Epoch 240/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0187 - my_iou_metric: 0.9001 - val_loss: 0.2467 - val_my_iou_metric:
0.7914

Epoch 00240: val_my_iou_metric did not improve from 0.81125

Epoch 241/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0190 - my_iou_metric: 0.8960 - val_loss: 0.2622 - val_my_iou_metric:
0.7866

Epoch 00241: val_my_iou_metric did not improve from 0.81125

Epoch 242/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0188 - my_iou_metric: 0.8935 - val_loss: 0.2498 - val_my_iou_metric:

0.8075

Epoch 00242: val_my_iou_metric did not improve from 0.81125

Epoch 243/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0193 - my_iou_metric: 0.8988 - val_loss: 0.1875 - val_my_iou_metric: 0.8060

Epoch 00243: val_my_iou_metric did not improve from 0.81125

Epoch 244/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0216 - my_iou_metric: 0.8912 - val_loss: 0.2169 - val_my_iou_metric: 0.7926

Epoch 00244: val_my_iou_metric did not improve from 0.81125

Epoch 245/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0188 - my_iou_metric: 0.8936 - val_loss: 0.2744 - val_my_iou_metric: 0.7967

Epoch 00245: val_my_iou_metric did not improve from 0.81125

Epoch 00245: ReduceLROnPlateau reducing learning rate to 0.0006332511978689581.

Epoch 246/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0186 - my_iou_metric: 0.8991 - val_loss: 0.2445 - val_my_iou_metric: 0.8007

Epoch 00246: val_my_iou_metric did not improve from 0.81125

Epoch 247/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0173 - my_iou_metric: 0.8994 - val_loss: 0.2371 - val_my_iou_metric: 0.8038

Epoch 00247: val_my_iou_metric did not improve from 0.81125

Epoch 248/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0181 - my_iou_metric: 0.9003 - val_loss: 0.2293 - val_my_iou_metric: 0.8076

Epoch 00248: val_my_iou_metric did not improve from 0.81125

Epoch 249/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0219 - my_iou_metric: 0.8919 - val_loss: 0.2343 - val_my_iou_metric: 0.7651

Epoch 00249: val_my_iou_metric did not improve from 0.81125

Epoch 250/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0213 - my_iou_metric: 0.8911 - val_loss: 0.2424 - val_my_iou_metric:
0.8064

Epoch 00250: val_my_iou_metric did not improve from 0.81125

Epoch 251/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0186 - my_iou_metric: 0.8956 - val_loss: 0.2189 - val_my_iou_metric:
0.7896

Epoch 00251: val_my_iou_metric did not improve from 0.81125

Epoch 252/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0271 - my_iou_metric: 0.8819 - val_loss: 0.2398 - val_my_iou_metric:
0.7690

Epoch 00252: val_my_iou_metric did not improve from 0.81125

Epoch 253/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0208 - my_iou_metric: 0.8916 - val_loss: 0.1992 - val_my_iou_metric:
0.8142

Epoch 00253: val_my_iou_metric improved from 0.81125 to 0.81425, sav
ing model to ./UNET_best_base_squeeze_07.model

Epoch 254/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0178 - my_iou_metric: 0.9025 - val_loss: 0.2646 - val_my_iou_metric:
0.7971

Epoch 00254: val_my_iou_metric did not improve from 0.81425

Epoch 255/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0169 - my_iou_metric: 0.9035 - val_loss: 0.2327 - val_my_iou_metric:
0.8098

Epoch 00255: val_my_iou_metric did not improve from 0.81425

Epoch 256/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0178 - my_iou_metric: 0.9002 - val_loss: 0.2230 - val_my_iou_metric:
0.8128

Epoch 00256: val_my_iou_metric did not improve from 0.81425

Epoch 257/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0184 - my_iou_metric: 0.9025 - val_loss: 0.2020 - val_my_iou_metric:
0.7999

Epoch 00257: val_my_iou_metric did not improve from 0.81425

Epoch 258/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0231 - my_iou_metric: 0.8873 - val_loss: 0.2343 - val_my_iou_metric:

0.7786

Epoch 00258: val_my_iou_metric did not improve from 0.81425

Epoch 259/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0207 - my_iou_metric: 0.8880 - val_loss: 0.2488 - val_my_iou_metric: 0.7945

Epoch 00259: val_my_iou_metric did not improve from 0.81425

Epoch 260/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0174 - my_iou_metric: 0.9018 - val_loss: 0.2802 - val_my_iou_metric: 0.7966

Epoch 00260: val_my_iou_metric did not improve from 0.81425

Epoch 261/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0184 - my_iou_metric: 0.8996 - val_loss: 0.2705 - val_my_iou_metric: 0.7954

Epoch 00261: val_my_iou_metric did not improve from 0.81425

Epoch 262/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0181 - my_iou_metric: 0.9028 - val_loss: 0.2782 - val_my_iou_metric: 0.7872

Epoch 00262: val_my_iou_metric did not improve from 0.81425

Epoch 263/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0167 - my_iou_metric: 0.9069 - val_loss: 0.2763 - val_my_iou_metric: 0.8009

Epoch 00263: val_my_iou_metric did not improve from 0.81425

Epoch 00263: ReduceLROnPlateau reducing learning rate to 0.0006142536766128615.

Epoch 264/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0178 - my_iou_metric: 0.9015 - val_loss: 0.2528 - val_my_iou_metric: 0.7990

Epoch 00264: val_my_iou_metric did not improve from 0.81425

Epoch 265/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0189 - my_iou_metric: 0.8965 - val_loss: 0.2181 - val_my_iou_metric: 0.7946

Epoch 00265: val_my_iou_metric did not improve from 0.81425

Epoch 266/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0192 - my_iou_metric: 0.8941 - val_loss: 0.2725 - val_my_iou_metric:
0.7969

Epoch 00266: val_my_iou_metric did not improve from 0.81425

Epoch 267/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0261 - my_iou_metric: 0.8854 - val_loss: 0.2441 - val_my_iou_metric:
0.7889

Epoch 00267: val_my_iou_metric did not improve from 0.81425

Epoch 268/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0215 - my_iou_metric: 0.8957 - val_loss: 0.2406 - val_my_iou_metric:
0.7960

Epoch 00268: val_my_iou_metric did not improve from 0.81425

Epoch 269/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0200 - my_iou_metric: 0.8986 - val_loss: 0.2609 - val_my_iou_metric:
0.8046

Epoch 00269: val_my_iou_metric did not improve from 0.81425

Epoch 270/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0170 - my_iou_metric: 0.9006 - val_loss: 0.2481 - val_my_iou_metric:
0.8044

Epoch 00270: val_my_iou_metric did not improve from 0.81425

Epoch 271/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0216 - my_iou_metric: 0.8938 - val_loss: 0.2505 - val_my_iou_metric:
0.7905

Epoch 00271: val_my_iou_metric did not improve from 0.81425

Epoch 272/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0188 - my_iou_metric: 0.8936 - val_loss: 0.2726 - val_my_iou_metric:
0.8006

Epoch 00272: val_my_iou_metric did not improve from 0.81425

Epoch 273/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0183 - my_iou_metric: 0.8970 - val_loss: 0.2648 - val_my_iou_metric:
0.8075

Epoch 00273: val_my_iou_metric did not improve from 0.81425

Epoch 00273: ReduceLROnPlateau reducing learning rate to 0.000595826
0770421475.

Epoch 274/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0172 - my_iou_metric: 0.9017 - val_loss: 0.2799 - val_my_iou_metric: 0.7903

Epoch 00274: val_my_iou_metric did not improve from 0.81425
Epoch 275/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0166 - my_iou_metric: 0.9031 - val_loss: 0.2672 - val_my_iou_metric: 0.8118

Epoch 00275: val_my_iou_metric did not improve from 0.81425
Epoch 276/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0159 - my_iou_metric: 0.9069 - val_loss: 0.2831 - val_my_iou_metric: 0.8086

Epoch 00276: val_my_iou_metric did not improve from 0.81425
Epoch 277/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0160 - my_iou_metric: 0.9068 - val_loss: 0.2600 - val_my_iou_metric: 0.8043

Epoch 00277: val_my_iou_metric did not improve from 0.81425
Epoch 278/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0158 - my_iou_metric: 0.9103 - val_loss: 0.2795 - val_my_iou_metric: 0.8110

Epoch 00278: val_my_iou_metric did not improve from 0.81425
Epoch 279/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0154 - my_iou_metric: 0.9092 - val_loss: 0.2785 - val_my_iou_metric: 0.8152

Epoch 00279: val_my_iou_metric improved from 0.81425 to 0.81525, saving model to ./UNET_best_base_squeeze_07.model
Epoch 280/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0157 - my_iou_metric: 0.9104 - val_loss: 0.3030 - val_my_iou_metric: 0.8012

Epoch 00280: val_my_iou_metric did not improve from 0.81525
Epoch 281/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0186 - my_iou_metric: 0.9021 - val_loss: 0.2718 - val_my_iou_metric: 0.7980

Epoch 00281: val_my_iou_metric did not improve from 0.81525
Epoch 282/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0162 - my_iou_metric: 0.9052 - val_loss: 0.2887 - val_my_iou_metric:
0.7993

Epoch 00282: val_my_iou_metric did not improve from 0.81525

Epoch 283/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0157 - my_iou_metric: 0.9063 - val_loss: 0.2901 - val_my_iou_metric:
0.8086

Epoch 00283: val_my_iou_metric did not improve from 0.81525

Epoch 284/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0176 - my_iou_metric: 0.9010 - val_loss: 0.2941 - val_my_iou_metric:
0.7841

Epoch 00284: val_my_iou_metric did not improve from 0.81525

Epoch 285/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0240 - my_iou_metric: 0.8880 - val_loss: 0.2034 - val_my_iou_metric:
0.7913

Epoch 00285: val_my_iou_metric did not improve from 0.81525

Epoch 286/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0247 - my_iou_metric: 0.8911 - val_loss: 0.1924 - val_my_iou_metric:
0.7912

Epoch 00286: val_my_iou_metric did not improve from 0.81525

Epoch 287/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0200 - my_iou_metric: 0.8977 - val_loss: 0.2346 - val_my_iou_metric:
0.7913

Epoch 00287: val_my_iou_metric did not improve from 0.81525

Epoch 288/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0168 - my_iou_metric: 0.9027 - val_loss: 0.2678 - val_my_iou_metric:
0.7875

Epoch 00288: val_my_iou_metric did not improve from 0.81525

Epoch 289/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.
0166 - my_iou_metric: 0.9021 - val_loss: 0.2552 - val_my_iou_metric:
0.8078

Epoch 00289: val_my_iou_metric did not improve from 0.81525

Epoch 00289: ReduceLROnPlateau reducing learning rate to 0.000577951
2913431972.

Epoch 290/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0168 - my_iou_metric: 0.9056 - val_loss: 0.2190 - val_my_iou_metric: 0.8093

Epoch 00290: val_my_iou_metric did not improve from 0.81525

Epoch 291/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0157 - my_iou_metric: 0.9073 - val_loss: 0.2455 - val_my_iou_metric: 0.7919

Epoch 00291: val_my_iou_metric did not improve from 0.81525

Epoch 292/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0160 - my_iou_metric: 0.9073 - val_loss: 0.2363 - val_my_iou_metric: 0.8086

Epoch 00292: val_my_iou_metric did not improve from 0.81525

Epoch 293/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0167 - my_iou_metric: 0.9069 - val_loss: 0.2317 - val_my_iou_metric: 0.7864

Epoch 00293: val_my_iou_metric did not improve from 0.81525

Epoch 294/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0160 - my_iou_metric: 0.9061 - val_loss: 0.2564 - val_my_iou_metric: 0.7958

Epoch 00294: val_my_iou_metric did not improve from 0.81525

Epoch 295/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0154 - my_iou_metric: 0.9063 - val_loss: 0.3389 - val_my_iou_metric: 0.8042

Epoch 00295: val_my_iou_metric did not improve from 0.81525

Epoch 296/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0169 - my_iou_metric: 0.9042 - val_loss: 0.2808 - val_my_iou_metric: 0.8040

Epoch 00296: val_my_iou_metric did not improve from 0.81525

Epoch 297/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0158 - my_iou_metric: 0.9062 - val_loss: 0.2630 - val_my_iou_metric: 0.8052

Epoch 00297: val_my_iou_metric did not improve from 0.81525

Epoch 298/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0203 - my_iou_metric: 0.8962 - val_loss: 0.2585 - val_my_iou_metric:

0.7845

Epoch 00298: val_my_iou_metric did not improve from 0.81525

Epoch 299/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0234 - my_iou_metric: 0.8891 - val_loss: 0.2029 - val_my_iou_metric: 0.7981

Epoch 00299: val_my_iou_metric did not improve from 0.81525

Epoch 00299: ReduceLROnPlateau reducing learning rate to 0.0005606127763167024.

Epoch 300/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0193 - my_iou_metric: 0.8968 - val_loss: 0.2408 - val_my_iou_metric: 0.7914

Epoch 00300: val_my_iou_metric did not improve from 0.81525

Epoch 301/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0182 - my_iou_metric: 0.9020 - val_loss: 0.2432 - val_my_iou_metric: 0.8033

Epoch 00301: val_my_iou_metric did not improve from 0.81525

Epoch 302/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0161 - my_iou_metric: 0.9068 - val_loss: 0.2967 - val_my_iou_metric: 0.7979

Epoch 00302: val_my_iou_metric did not improve from 0.81525

Epoch 303/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0156 - my_iou_metric: 0.9091 - val_loss: 0.2438 - val_my_iou_metric: 0.7979

Epoch 00303: val_my_iou_metric did not improve from 0.81525

Epoch 304/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0162 - my_iou_metric: 0.9105 - val_loss: 0.2405 - val_my_iou_metric: 0.8010

Epoch 00304: val_my_iou_metric did not improve from 0.81525

Epoch 305/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0153 - my_iou_metric: 0.9094 - val_loss: 0.2798 - val_my_iou_metric: 0.8018

Epoch 00305: val_my_iou_metric did not improve from 0.81525

Epoch 306/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0157 - my_iou_metric: 0.9105 - val_loss: 0.2386 - val_my_iou_metric:
0.8019

Epoch 00306: val_my_iou_metric did not improve from 0.81525

Epoch 307/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.
0186 - my_iou_metric: 0.9053 - val_loss: 0.2309 - val_my_iou_metric:
0.7964

Epoch 00307: val_my_iou_metric did not improve from 0.81525

Epoch 308/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0153 - my_iou_metric: 0.9076 - val_loss: 0.2724 - val_my_iou_metric:
0.7913

Epoch 00308: val_my_iou_metric did not improve from 0.81525

Epoch 309/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0158 - my_iou_metric: 0.9052 - val_loss: 0.2302 - val_my_iou_metric:
0.8159

Epoch 00309: val_my_iou_metric improved from 0.81525 to 0.81588, sav
ing model to ./UNET_best_base_squeeze_07.model

Epoch 310/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0170 - my_iou_metric: 0.9016 - val_loss: 0.3068 - val_my_iou_metric:
0.7891

Epoch 00310: val_my_iou_metric did not improve from 0.81588

Epoch 311/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0182 - my_iou_metric: 0.8974 - val_loss: 0.2653 - val_my_iou_metric:
0.8056

Epoch 00311: val_my_iou_metric did not improve from 0.81588

Epoch 312/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0161 - my_iou_metric: 0.9059 - val_loss: 0.3097 - val_my_iou_metric:
0.7979

Epoch 00312: val_my_iou_metric did not improve from 0.81588

Epoch 313/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0190 - my_iou_metric: 0.9012 - val_loss: 0.2632 - val_my_iou_metric:
0.8079

Epoch 00313: val_my_iou_metric did not improve from 0.81588

Epoch 314/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.
0185 - my_iou_metric: 0.9038 - val_loss: 0.2709 - val_my_iou_metric:

0.8019

Epoch 00314: val_my_iou_metric did not improve from 0.81588

Epoch 315/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0152 - my_iou_metric: 0.9107 - val_loss: 0.2883 - val_my_iou_metric: 0.8040

Epoch 00315: val_my_iou_metric did not improve from 0.81588

Epoch 316/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0147 - my_iou_metric: 0.9103 - val_loss: 0.2818 - val_my_iou_metric: 0.7963

Epoch 00316: val_my_iou_metric did not improve from 0.81588

Epoch 317/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0145 - my_iou_metric: 0.9137 - val_loss: 0.2617 - val_my_iou_metric: 0.8030

Epoch 00317: val_my_iou_metric did not improve from 0.81588

Epoch 318/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0149 - my_iou_metric: 0.9140 - val_loss: 0.2840 - val_my_iou_metric: 0.8084

Epoch 00318: val_my_iou_metric did not improve from 0.81588

Epoch 319/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0166 - my_iou_metric: 0.9062 - val_loss: 0.2622 - val_my_iou_metric: 0.7930

Epoch 00319: val_my_iou_metric did not improve from 0.81588

Epoch 00319: ReduceLROnPlateau reducing learning rate to 0.0005437943839933723.

Epoch 320/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0150 - my_iou_metric: 0.9128 - val_loss: 0.2827 - val_my_iou_metric: 0.8013

Epoch 00320: val_my_iou_metric did not improve from 0.81588

Epoch 321/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0160 - my_iou_metric: 0.9096 - val_loss: 0.2244 - val_my_iou_metric: 0.8071

Epoch 00321: val_my_iou_metric did not improve from 0.81588

Epoch 322/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0157 - my_iou_metric: 0.9079 - val_loss: 0.2233 - val_my_iou_metric:
0.8116

Epoch 00322: val_my_iou_metric did not improve from 0.81588

Epoch 323/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0158 - my_iou_metric: 0.9090 - val_loss: 0.2450 - val_my_iou_metric:
0.8061

Epoch 00323: val_my_iou_metric did not improve from 0.81588

Epoch 324/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0162 - my_iou_metric: 0.9116 - val_loss: 0.2211 - val_my_iou_metric:
0.8099

Epoch 00324: val_my_iou_metric did not improve from 0.81588

Epoch 325/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0147 - my_iou_metric: 0.9129 - val_loss: 0.2610 - val_my_iou_metric:
0.8135

Epoch 00325: val_my_iou_metric did not improve from 0.81588

Epoch 326/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0140 - my_iou_metric: 0.9154 - val_loss: 0.2673 - val_my_iou_metric:
0.8061

Epoch 00326: val_my_iou_metric did not improve from 0.81588

Epoch 327/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0165 - my_iou_metric: 0.9138 - val_loss: 0.2533 - val_my_iou_metric:
0.8043

Epoch 00327: val_my_iou_metric did not improve from 0.81588

Epoch 328/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0255 - my_iou_metric: 0.8934 - val_loss: 0.2157 - val_my_iou_metric:
0.7856

Epoch 00328: val_my_iou_metric did not improve from 0.81588

Epoch 329/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0175 - my_iou_metric: 0.9003 - val_loss: 0.2650 - val_my_iou_metric:
0.7924

Epoch 00329: val_my_iou_metric did not improve from 0.81588

Epoch 00329: ReduceLROnPlateau reducing learning rate to 0.000527480
5310182273.

Epoch 330/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0178 - my_iou_metric: 0.9038 - val_loss: 0.2564 - val_my_iou_metric: 0.8045

Epoch 00330: val_my_iou_metric did not improve from 0.81588

Epoch 331/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0173 - my_iou_metric: 0.9054 - val_loss: 0.2719 - val_my_iou_metric: 0.8036

Epoch 00331: val_my_iou_metric did not improve from 0.81588

Epoch 332/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0177 - my_iou_metric: 0.9055 - val_loss: 0.2456 - val_my_iou_metric: 0.8056

Epoch 00332: val_my_iou_metric did not improve from 0.81588

Epoch 333/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0181 - my_iou_metric: 0.9039 - val_loss: 0.2999 - val_my_iou_metric: 0.7998

Epoch 00333: val_my_iou_metric did not improve from 0.81588

Epoch 334/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0159 - my_iou_metric: 0.9114 - val_loss: 0.2913 - val_my_iou_metric: 0.7967

Epoch 00334: val_my_iou_metric did not improve from 0.81588

Epoch 335/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0161 - my_iou_metric: 0.9094 - val_loss: 0.2860 - val_my_iou_metric: 0.7974

Epoch 00335: val_my_iou_metric did not improve from 0.81588

Epoch 336/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0180 - my_iou_metric: 0.9085 - val_loss: 0.2265 - val_my_iou_metric: 0.8000

Epoch 00336: val_my_iou_metric did not improve from 0.81588

Epoch 337/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0151 - my_iou_metric: 0.9087 - val_loss: 0.2762 - val_my_iou_metric: 0.8034

Epoch 00337: val_my_iou_metric did not improve from 0.81588

Epoch 338/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0151 - my_iou_metric: 0.9111 - val_loss: 0.2732 - val_my_iou_metric:

0.7909

Epoch 00338: val_my_iou_metric did not improve from 0.81588

Epoch 339/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0151 - my_iou_metric: 0.9146 - val_loss: 0.2407 - val_my_iou_metric: 0.8062

Epoch 00339: val_my_iou_metric did not improve from 0.81588

Epoch 00339: ReduceLROnPlateau reducing learning rate to 0.0005116561421891674.

Epoch 340/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0150 - my_iou_metric: 0.9114 - val_loss: 0.2062 - val_my_iou_metric: 0.7960

Epoch 00340: val_my_iou_metric did not improve from 0.81588

Epoch 341/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0147 - my_iou_metric: 0.9143 - val_loss: 0.2735 - val_my_iou_metric: 0.8071

Epoch 00341: val_my_iou_metric did not improve from 0.81588

Epoch 342/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0141 - my_iou_metric: 0.9149 - val_loss: 0.2724 - val_my_iou_metric: 0.8050

Epoch 00342: val_my_iou_metric did not improve from 0.81588

Epoch 343/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0140 - my_iou_metric: 0.9140 - val_loss: 0.2797 - val_my_iou_metric: 0.8052

Epoch 00343: val_my_iou_metric did not improve from 0.81588

Epoch 344/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0145 - my_iou_metric: 0.9120 - val_loss: 0.2907 - val_my_iou_metric: 0.8016

Epoch 00344: val_my_iou_metric did not improve from 0.81588

Epoch 345/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0156 - my_iou_metric: 0.9097 - val_loss: 0.2710 - val_my_iou_metric: 0.8100

Epoch 00345: val_my_iou_metric did not improve from 0.81588

Epoch 346/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0143 - my_iou_metric: 0.9136 - val_loss: 0.2455 - val_my_iou_metric:
0.8111

Epoch 00346: val_my_iou_metric did not improve from 0.81588

Epoch 347/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0140 - my_iou_metric: 0.9139 - val_loss: 0.2645 - val_my_iou_metric:
0.8020

Epoch 00347: val_my_iou_metric did not improve from 0.81588

Epoch 348/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0135 - my_iou_metric: 0.9159 - val_loss: 0.2909 - val_my_iou_metric:
0.8114

Epoch 00348: val_my_iou_metric did not improve from 0.81588

Epoch 349/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0134 - my_iou_metric: 0.9165 - val_loss: 0.2772 - val_my_iou_metric:
0.8077

Epoch 00349: val_my_iou_metric did not improve from 0.81588

Epoch 00349: ReduceLROnPlateau reducing learning rate to 0.000496306
4810726792.

Epoch 350/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0141 - my_iou_metric: 0.9180 - val_loss: 0.2986 - val_my_iou_metric:
0.7887

Epoch 00350: val_my_iou_metric did not improve from 0.81588

Epoch 351/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0137 - my_iou_metric: 0.9176 - val_loss: 0.3012 - val_my_iou_metric:
0.8110

Epoch 00351: val_my_iou_metric did not improve from 0.81588

Epoch 352/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0134 - my_iou_metric: 0.9190 - val_loss: 0.3130 - val_my_iou_metric:
0.8080

Epoch 00352: val_my_iou_metric did not improve from 0.81588

Epoch 353/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0133 - my_iou_metric: 0.9179 - val_loss: 0.2812 - val_my_iou_metric:
0.8044

Epoch 00353: val_my_iou_metric did not improve from 0.81588

Epoch 354/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0134 - my_iou_metric: 0.9192 - val_loss: 0.3162 - val_my_iou_metric: 0.8058

Epoch 00354: val_my_iou_metric did not improve from 0.81588
Epoch 355/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0143 - my_iou_metric: 0.9173 - val_loss: 0.3073 - val_my_iou_metric: 0.7890

Epoch 00355: val_my_iou_metric did not improve from 0.81588
Epoch 356/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0203 - my_iou_metric: 0.9028 - val_loss: 0.2862 - val_my_iou_metric: 0.7975

Epoch 00356: val_my_iou_metric did not improve from 0.81588
Epoch 357/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0141 - my_iou_metric: 0.9148 - val_loss: 0.2794 - val_my_iou_metric: 0.8085

Epoch 00357: val_my_iou_metric did not improve from 0.81588
Epoch 358/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0134 - my_iou_metric: 0.9164 - val_loss: 0.2779 - val_my_iou_metric: 0.8097

Epoch 00358: val_my_iou_metric did not improve from 0.81588
Epoch 359/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0172 - my_iou_metric: 0.9129 - val_loss: 0.2034 - val_my_iou_metric: 0.7695

Epoch 00359: val_my_iou_metric did not improve from 0.81588

Epoch 00359: ReduceLROnPlateau reducing learning rate to 0.0004814172629266977.

Epoch 360/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0197 - my_iou_metric: 0.9016 - val_loss: 0.2510 - val_my_iou_metric: 0.7821

Epoch 00360: val_my_iou_metric did not improve from 0.81588
Epoch 361/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0167 - my_iou_metric: 0.9029 - val_loss: 0.2436 - val_my_iou_metric: 0.7905

Epoch 00361: val_my_iou_metric did not improve from 0.81588

Epoch 362/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0164 - my_iou_metric: 0.9077 - val_loss: 0.2745 - val_my_iou_metric: 0.7970

Epoch 00362: val_my_iou_metric did not improve from 0.81588

Epoch 363/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0163 - my_iou_metric: 0.9113 - val_loss: 0.2620 - val_my_iou_metric: 0.8052

Epoch 00363: val_my_iou_metric did not improve from 0.81588

Epoch 364/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0140 - my_iou_metric: 0.9145 - val_loss: 0.2722 - val_my_iou_metric: 0.8075

Epoch 00364: val_my_iou_metric did not improve from 0.81588

Epoch 365/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0138 - my_iou_metric: 0.9161 - val_loss: 0.2641 - val_my_iou_metric: 0.8066

Epoch 00365: val_my_iou_metric did not improve from 0.81588

Epoch 366/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0144 - my_iou_metric: 0.9160 - val_loss: 0.2774 - val_my_iou_metric: 0.8070

Epoch 00366: val_my_iou_metric did not improve from 0.81588

Epoch 367/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0135 - my_iou_metric: 0.9183 - val_loss: 0.2692 - val_my_iou_metric: 0.8099

Epoch 00367: val_my_iou_metric did not improve from 0.81588

Epoch 368/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0159 - my_iou_metric: 0.9131 - val_loss: 0.2839 - val_my_iou_metric: 0.8064

Epoch 00368: val_my_iou_metric did not improve from 0.81588

Epoch 369/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0139 - my_iou_metric: 0.9149 - val_loss: 0.3262 - val_my_iou_metric: 0.8004

Epoch 00369: val_my_iou_metric did not improve from 0.81588

Epoch 00369: ReduceLROnPlateau reducing learning rate to 0.000466974

73939275367.

Epoch 370/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0145 - my_iou_metric: 0.9151 - val_loss: 0.2331 - val_my_iou_metric: 0.8016

Epoch 00370: val_my_iou_metric did not improve from 0.81588

Epoch 371/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0137 - my_iou_metric: 0.9176 - val_loss: 0.2777 - val_my_iou_metric: 0.8065

Epoch 00371: val_my_iou_metric did not improve from 0.81588

Epoch 372/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0134 - my_iou_metric: 0.9198 - val_loss: 0.3062 - val_my_iou_metric: 0.8043

Epoch 00372: val_my_iou_metric did not improve from 0.81588

Epoch 373/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0128 - my_iou_metric: 0.9222 - val_loss: 0.2991 - val_my_iou_metric: 0.8081

Epoch 00373: val_my_iou_metric did not improve from 0.81588

Epoch 374/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0130 - my_iou_metric: 0.9209 - val_loss: 0.2873 - val_my_iou_metric: 0.8050

Epoch 00374: val_my_iou_metric did not improve from 0.81588

Epoch 375/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0126 - my_iou_metric: 0.9206 - val_loss: 0.3226 - val_my_iou_metric: 0.8095

Epoch 00375: val_my_iou_metric did not improve from 0.81588

Epoch 376/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0137 - my_iou_metric: 0.9212 - val_loss: 0.2226 - val_my_iou_metric: 0.8044

Epoch 00376: val_my_iou_metric did not improve from 0.81588

Epoch 377/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0153 - my_iou_metric: 0.9130 - val_loss: 0.2688 - val_my_iou_metric: 0.8080

Epoch 00377: val_my_iou_metric did not improve from 0.81588

Epoch 378/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0131 - my_iou_metric: 0.9187 - val_loss: 0.2753 - val_my_iou_metric: 0.8074

Epoch 00378: val_my_iou_metric did not improve from 0.81588

Epoch 379/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0144 - my_iou_metric: 0.9152 - val_loss: 0.3254 - val_my_iou_metric: 0.7871

Epoch 00379: val_my_iou_metric did not improve from 0.81588

Epoch 00379: ReduceLROnPlateau reducing learning rate to 0.0004529655008809641.

Epoch 380/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0152 - my_iou_metric: 0.9142 - val_loss: 0.2676 - val_my_iou_metric: 0.7986

Epoch 00380: val_my_iou_metric did not improve from 0.81588

Epoch 381/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0134 - my_iou_metric: 0.9203 - val_loss: 0.2655 - val_my_iou_metric: 0.8146

Epoch 00381: val_my_iou_metric did not improve from 0.81588

Epoch 382/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0137 - my_iou_metric: 0.9163 - val_loss: 0.2801 - val_my_iou_metric: 0.8122

Epoch 00382: val_my_iou_metric did not improve from 0.81588

Epoch 383/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0139 - my_iou_metric: 0.9173 - val_loss: 0.2953 - val_my_iou_metric: 0.7984

Epoch 00383: val_my_iou_metric did not improve from 0.81588

Epoch 384/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0143 - my_iou_metric: 0.9170 - val_loss: 0.2826 - val_my_iou_metric: 0.8086

Epoch 00384: val_my_iou_metric did not improve from 0.81588

Epoch 385/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.0154 - my_iou_metric: 0.9150 - val_loss: 0.2772 - val_my_iou_metric: 0.7982

Epoch 00385: val_my_iou_metric did not improve from 0.81588

Epoch 386/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0138 - my_iou_metric: 0.9171 - val_loss: 0.2921 - val_my_iou_metric: 0.8044

Epoch 00386: val_my_iou_metric did not improve from 0.81588

Epoch 387/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0129 - my_iou_metric: 0.9196 - val_loss: 0.2891 - val_my_iou_metric: 0.8127

Epoch 00387: val_my_iou_metric did not improve from 0.81588

Epoch 388/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0127 - my_iou_metric: 0.9204 - val_loss: 0.2929 - val_my_iou_metric: 0.8070

Epoch 00388: val_my_iou_metric did not improve from 0.81588

Epoch 389/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0128 - my_iou_metric: 0.9212 - val_loss: 0.2837 - val_my_iou_metric: 0.8090

Epoch 00389: val_my_iou_metric did not improve from 0.81588

Epoch 00389: ReduceLROnPlateau reducing learning rate to 0.0004393765330314636.

Epoch 390/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0125 - my_iou_metric: 0.9222 - val_loss: 0.2865 - val_my_iou_metric: 0.8089

Epoch 00390: val_my_iou_metric did not improve from 0.81588

Epoch 391/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0123 - my_iou_metric: 0.9238 - val_loss: 0.3057 - val_my_iou_metric: 0.8079

Epoch 00391: val_my_iou_metric did not improve from 0.81588

Epoch 392/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0127 - my_iou_metric: 0.9214 - val_loss: 0.2849 - val_my_iou_metric: 0.8096

Epoch 00392: val_my_iou_metric did not improve from 0.81588

Epoch 393/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9232 - val_loss: 0.3186 - val_my_iou_metric: 0.7941

Epoch 00393: val_my_iou_metric did not improve from 0.81588
Epoch 394/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0127 - my_iou_metric: 0.9217 - val_loss: 0.3170 - val_my_iou_metric: 0.7989

Epoch 00394: val_my_iou_metric did not improve from 0.81588
Epoch 395/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9212 - val_loss: 0.3072 - val_my_iou_metric: 0.8060

Epoch 00395: val_my_iou_metric did not improve from 0.81588
Epoch 396/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0193 - my_iou_metric: 0.9036 - val_loss: 0.2705 - val_my_iou_metric: 0.8070

Epoch 00396: val_my_iou_metric did not improve from 0.81588
Epoch 397/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0135 - my_iou_metric: 0.9189 - val_loss: 0.2340 - val_my_iou_metric: 0.7969

Epoch 00397: val_my_iou_metric did not improve from 0.81588
Epoch 398/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0159 - my_iou_metric: 0.9105 - val_loss: 0.2510 - val_my_iou_metric: 0.8110

Epoch 00398: val_my_iou_metric did not improve from 0.81588
Epoch 399/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0133 - my_iou_metric: 0.9181 - val_loss: 0.2713 - val_my_iou_metric: 0.8084

Epoch 00399: val_my_iou_metric did not improve from 0.81588

Epoch 00399: ReduceLROnPlateau reducing learning rate to 0.00042619524494512005.

Epoch 400/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0126 - my_iou_metric: 0.9233 - val_loss: 0.2910 - val_my_iou_metric: 0.8110

Epoch 00400: val_my_iou_metric did not improve from 0.81588
Epoch 401/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9241 - val_loss: 0.3088 - val_my_iou_metric: 0.8156

Epoch 00401: val_my_iou_metric did not improve from 0.81588
Epoch 402/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9224 - val_loss: 0.2919 - val_my_iou_metric: 0.8069

Epoch 00402: val_my_iou_metric did not improve from 0.81588
Epoch 403/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0122 - my_iou_metric: 0.9214 - val_loss: 0.2876 - val_my_iou_metric: 0.8094

Epoch 00403: val_my_iou_metric did not improve from 0.81588
Epoch 404/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9232 - val_loss: 0.2753 - val_my_iou_metric: 0.8166

Epoch 00404: val_my_iou_metric improved from 0.81588 to 0.81662, saving model to ./UNET_best_base_squeeze_07.model
Epoch 405/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0122 - my_iou_metric: 0.9257 - val_loss: 0.2818 - val_my_iou_metric: 0.8114

Epoch 00405: val_my_iou_metric did not improve from 0.81662
Epoch 406/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0123 - my_iou_metric: 0.9232 - val_loss: 0.3024 - val_my_iou_metric: 0.8093

Epoch 00406: val_my_iou_metric did not improve from 0.81662
Epoch 407/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0125 - my_iou_metric: 0.9248 - val_loss: 0.2879 - val_my_iou_metric: 0.8176

Epoch 00407: val_my_iou_metric improved from 0.81662 to 0.81763, saving model to ./UNET_best_base_squeeze_07.model
Epoch 408/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0158 - my_iou_metric: 0.9188 - val_loss: 0.2659 - val_my_iou_metric: 0.8038

Epoch 00408: val_my_iou_metric did not improve from 0.81763
Epoch 409/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0131 - my_iou_metric: 0.9205 - val_loss: 0.2686 - val_my_iou_metric: 0.7996

Epoch 00409: val_my_iou_metric did not improve from 0.81763
Epoch 410/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0128 - my_iou_metric: 0.9222 - val_loss: 0.2976 - val_my_iou_metric: 0.8005

Epoch 00410: val_my_iou_metric did not improve from 0.81763
Epoch 411/600
6400/6400 [=====] - 42s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9219 - val_loss: 0.2803 - val_my_iou_metric: 0.7929

Epoch 00411: val_my_iou_metric did not improve from 0.81763
Epoch 412/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0122 - my_iou_metric: 0.9250 - val_loss: 0.2990 - val_my_iou_metric: 0.8130

Epoch 00412: val_my_iou_metric did not improve from 0.81763
Epoch 413/600
6400/6400 [=====] - 42s 6ms/step - loss: 0.0121 - my_iou_metric: 0.9241 - val_loss: 0.3182 - val_my_iou_metric: 0.8106

Epoch 00413: val_my_iou_metric did not improve from 0.81763
Epoch 414/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0123 - my_iou_metric: 0.9244 - val_loss: 0.3151 - val_my_iou_metric: 0.8069

Epoch 00414: val_my_iou_metric did not improve from 0.81763
Epoch 415/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0123 - my_iou_metric: 0.9255 - val_loss: 0.2983 - val_my_iou_metric: 0.8017

Epoch 00415: val_my_iou_metric did not improve from 0.81763
Epoch 416/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0121 - my_iou_metric: 0.9269 - val_loss: 0.2837 - val_my_iou_metric: 0.8110

Epoch 00416: val_my_iou_metric did not improve from 0.81763
Epoch 417/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0126 - my_iou_metric: 0.9226 - val_loss: 0.3050 - val_my_iou_metric: 0.8074

Epoch 00417: val_my_iou_metric did not improve from 0.81763

Epoch 00417: ReduceLROnPlateau reducing learning rate to 0.00041340938449138773.

Epoch 418/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0149 - my_iou_metric: 0.9159 - val_loss: 0.2801 - val_my_iou_metric: 0.8019

Epoch 00418: val_my_iou_metric did not improve from 0.81763

Epoch 419/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9231 - val_loss: 0.2867 - val_my_iou_metric: 0.8109

Epoch 00419: val_my_iou_metric did not improve from 0.81763

Epoch 420/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0123 - my_iou_metric: 0.9233 - val_loss: 0.2923 - val_my_iou_metric: 0.8025

Epoch 00420: val_my_iou_metric did not improve from 0.81763

Epoch 421/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0137 - my_iou_metric: 0.9188 - val_loss: 0.2729 - val_my_iou_metric: 0.8126

Epoch 00421: val_my_iou_metric did not improve from 0.81763

Epoch 422/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0120 - my_iou_metric: 0.9214 - val_loss: 0.2664 - val_my_iou_metric: 0.8110

Epoch 00422: val_my_iou_metric did not improve from 0.81763

Epoch 423/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0153 - my_iou_metric: 0.9183 - val_loss: 0.2788 - val_my_iou_metric: 0.8026

Epoch 00423: val_my_iou_metric did not improve from 0.81763

Epoch 424/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0128 - my_iou_metric: 0.9210 - val_loss: 0.2943 - val_my_iou_metric: 0.8066

Epoch 00424: val_my_iou_metric did not improve from 0.81763

Epoch 425/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0121 - my_iou_metric: 0.9227 - val_loss: 0.3130 - val_my_iou_metric: 0.8086

Epoch 00425: val_my_iou_metric did not improve from 0.81763
Epoch 426/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0119 - my_iou_metric: 0.9242 - val_loss: 0.3356 - val_my_iou_metric: 0.8105

Epoch 00426: val_my_iou_metric did not improve from 0.81763
Epoch 427/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0116 - my_iou_metric: 0.9286 - val_loss: 0.3428 - val_my_iou_metric: 0.8163

Epoch 00427: val_my_iou_metric did not improve from 0.81763

Epoch 00427: ReduceLROnPlateau reducing learning rate to 0.0004010070947697386.

Epoch 428/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0118 - my_iou_metric: 0.9282 - val_loss: 0.3265 - val_my_iou_metric: 0.8025

Epoch 00428: val_my_iou_metric did not improve from 0.81763
Epoch 429/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0150 - my_iou_metric: 0.9222 - val_loss: 0.3138 - val_my_iou_metric: 0.8032

Epoch 00429: val_my_iou_metric did not improve from 0.81763
Epoch 430/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0120 - my_iou_metric: 0.9251 - val_loss: 0.3464 - val_my_iou_metric: 0.8008

Epoch 00430: val_my_iou_metric did not improve from 0.81763
Epoch 431/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0119 - my_iou_metric: 0.9234 - val_loss: 0.2834 - val_my_iou_metric: 0.8062

Epoch 00431: val_my_iou_metric did not improve from 0.81763
Epoch 432/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0122 - my_iou_metric: 0.9238 - val_loss: 0.3275 - val_my_iou_metric: 0.8035

Epoch 00432: val_my_iou_metric did not improve from 0.81763
Epoch 433/600
6400/6400 [=====] - 40s 6ms/step - loss: 0.0119 - my_iou_metric: 0.9247 - val_loss: 0.3246 - val_my_iou_metric: 0.8126

Epoch 00433: val_my_iou_metric did not improve from 0.81763
Epoch 434/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0155 - my_iou_metric: 0.9200 - val_loss: 0.2695 - val_my_iou_metric: 0.8063

Epoch 00434: val_my_iou_metric did not improve from 0.81763
Epoch 435/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0133 - my_iou_metric: 0.9225 - val_loss: 0.2914 - val_my_iou_metric: 0.8073

Epoch 00435: val_my_iou_metric did not improve from 0.81763
Epoch 436/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0137 - my_iou_metric: 0.9209 - val_loss: 0.2858 - val_my_iou_metric: 0.8046

Epoch 00436: val_my_iou_metric did not improve from 0.81763
Epoch 437/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0123 - my_iou_metric: 0.9234 - val_loss: 0.2956 - val_my_iou_metric: 0.8071

Epoch 00437: val_my_iou_metric did not improve from 0.81763

Epoch 00437: ReduceLROnPlateau reducing learning rate to 0.0003889768858789466.

Epoch 438/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0117 - my_iou_metric: 0.9248 - val_loss: 0.3063 - val_my_iou_metric: 0.8010

Epoch 00438: val_my_iou_metric did not improve from 0.81763
Epoch 439/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0123 - my_iou_metric: 0.9262 - val_loss: 0.3561 - val_my_iou_metric: 0.8066

Epoch 00439: val_my_iou_metric did not improve from 0.81763
Epoch 440/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0154 - my_iou_metric: 0.9193 - val_loss: 0.2988 - val_my_iou_metric: 0.7999

Epoch 00440: val_my_iou_metric did not improve from 0.81763
Epoch 441/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0141 - my_iou_metric: 0.9196 - val_loss: 0.3213 - val_my_iou_metric:

0.8077

Epoch 00441: val_my_iou_metric did not improve from 0.81763

Epoch 442/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0124 - my_iou_metric: 0.9212 - val_loss: 0.3140 - val_my_iou_metric: 0.8096

Epoch 00442: val_my_iou_metric did not improve from 0.81763

Epoch 443/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0117 - my_iou_metric: 0.9257 - val_loss: 0.3240 - val_my_iou_metric: 0.8069

Epoch 00443: val_my_iou_metric did not improve from 0.81763

Epoch 444/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0115 - my_iou_metric: 0.9299 - val_loss: 0.3395 - val_my_iou_metric: 0.8085

Epoch 00444: val_my_iou_metric did not improve from 0.81763

Epoch 445/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0119 - my_iou_metric: 0.9248 - val_loss: 0.3231 - val_my_iou_metric: 0.8115

Epoch 00445: val_my_iou_metric did not improve from 0.81763

Epoch 446/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0115 - my_iou_metric: 0.9293 - val_loss: 0.3545 - val_my_iou_metric: 0.8051

Epoch 00446: val_my_iou_metric did not improve from 0.81763

Epoch 447/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0113 - my_iou_metric: 0.9288 - val_loss: 0.3549 - val_my_iou_metric: 0.7965

Epoch 00447: val_my_iou_metric did not improve from 0.81763

Epoch 00447: ReduceLROnPlateau reducing learning rate to 0.00037730757845565676.

Epoch 448/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0113 - my_iou_metric: 0.9283 - val_loss: 0.3526 - val_my_iou_metric: 0.8055

Epoch 00448: val_my_iou_metric did not improve from 0.81763

Epoch 449/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0113 - my_iou_metric: 0.9268 - val_loss: 0.3439 - val_my_iou_metric:
0.8100

Epoch 00449: val_my_iou_metric did not improve from 0.81763

Epoch 450/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0111 - my_iou_metric: 0.9310 - val_loss: 0.3515 - val_my_iou_metric:
0.8138

Epoch 00450: val_my_iou_metric did not improve from 0.81763

Epoch 451/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0115 - my_iou_metric: 0.9283 - val_loss: 0.3658 - val_my_iou_metric:
0.8068

Epoch 00451: val_my_iou_metric did not improve from 0.81763

Epoch 452/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0113 - my_iou_metric: 0.9300 - val_loss: 0.3787 - val_my_iou_metric:
0.8037

Epoch 00452: val_my_iou_metric did not improve from 0.81763

Epoch 453/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0163 - my_iou_metric: 0.9167 - val_loss: 0.2734 - val_my_iou_metric:
0.8019

Epoch 00453: val_my_iou_metric did not improve from 0.81763

Epoch 454/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0122 - my_iou_metric: 0.9234 - val_loss: 0.2813 - val_my_iou_metric:
0.7980

Epoch 00454: val_my_iou_metric did not improve from 0.81763

Epoch 455/600

6400/6400 [=====] - 40s 6ms/step - loss: 0.

0119 - my_iou_metric: 0.9271 - val_loss: 0.2748 - val_my_iou_metric:
0.8152

Epoch 00455: val_my_iou_metric did not improve from 0.81763

Epoch 456/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0116 - my_iou_metric: 0.9273 - val_loss: 0.3034 - val_my_iou_metric:
0.8106

Epoch 00456: val_my_iou_metric did not improve from 0.81763

Epoch 457/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0114 - my_iou_metric: 0.9289 - val_loss: 0.2834 - val_my_iou_metric:
0.8120

Epoch 00457: val_my_iou_metric did not improve from 0.81763

Epoch 00457: ReduceLROnPlateau reducing learning rate to 0.000365988360135816.

Epoch 458/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0169 - my_iou_metric: 0.9146 - val_loss: 0.2207 - val_my_iou_metric: 0.8107

Epoch 00458: val_my_iou_metric did not improve from 0.81763

Epoch 459/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0118 - my_iou_metric: 0.9236 - val_loss: 0.2707 - val_my_iou_metric: 0.8110

Epoch 00459: val_my_iou_metric did not improve from 0.81763

Epoch 460/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0114 - my_iou_metric: 0.9284 - val_loss: 0.2724 - val_my_iou_metric: 0.8178

Epoch 00460: val_my_iou_metric improved from 0.81763 to 0.81775, saving model to ./UNET_best_base_squeeze_07.model

Epoch 461/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0113 - my_iou_metric: 0.9289 - val_loss: 0.2722 - val_my_iou_metric: 0.8097

Epoch 00461: val_my_iou_metric did not improve from 0.81775

Epoch 462/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0111 - my_iou_metric: 0.9312 - val_loss: 0.2887 - val_my_iou_metric: 0.8125

Epoch 00462: val_my_iou_metric did not improve from 0.81775

Epoch 463/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0112 - my_iou_metric: 0.9291 - val_loss: 0.2664 - val_my_iou_metric: 0.8135

Epoch 00463: val_my_iou_metric did not improve from 0.81775

Epoch 464/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0110 - my_iou_metric: 0.9272 - val_loss: 0.2741 - val_my_iou_metric: 0.8129

Epoch 00464: val_my_iou_metric did not improve from 0.81775

Epoch 465/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0114 - my_iou_metric: 0.9297 - val_loss: 0.2800 - val_my_iou_metric:
0.8147

Epoch 00465: val_my_iou_metric did not improve from 0.81775

Epoch 466/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0111 - my_iou_metric: 0.9296 - val_loss: 0.2754 - val_my_iou_metric:
0.8165

Epoch 00466: val_my_iou_metric did not improve from 0.81775

Epoch 467/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0111 - my_iou_metric: 0.9282 - val_loss: 0.3025 - val_my_iou_metric:
0.8105

Epoch 00467: val_my_iou_metric did not improve from 0.81775

Epoch 468/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0130 - my_iou_metric: 0.9263 - val_loss: 0.2611 - val_my_iou_metric:
0.7701

Epoch 00468: val_my_iou_metric did not improve from 0.81775

Epoch 469/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0120 - my_iou_metric: 0.9223 - val_loss: 0.2943 - val_my_iou_metric:
0.8074

Epoch 00469: val_my_iou_metric did not improve from 0.81775

Epoch 470/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0112 - my_iou_metric: 0.9293 - val_loss: 0.3203 - val_my_iou_metric:
0.8180

Epoch 00470: val_my_iou_metric improved from 0.81775 to 0.81800, sav
ing model to ./UNET_best_base_squeeze_07.model

Epoch 471/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0110 - my_iou_metric: 0.9317 - val_loss: 0.3378 - val_my_iou_metric:
0.8140

Epoch 00471: val_my_iou_metric did not improve from 0.81800

Epoch 472/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0111 - my_iou_metric: 0.9293 - val_loss: 0.3747 - val_my_iou_metric:
0.8135

Epoch 00472: val_my_iou_metric did not improve from 0.81800

Epoch 473/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0110 - my_iou_metric: 0.9293 - val_loss: 0.3182 - val_my_iou_metric:

0.8099

Epoch 00473: val_my_iou_metric did not improve from 0.81800

Epoch 474/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0110 - my_iou_metric: 0.9301 - val_loss: 0.3068 - val_my_iou_metric: 0.8193

Epoch 00474: val_my_iou_metric improved from 0.81800 to 0.81925, saving model to ./UNET_best_base_squeeze_07.model

Epoch 475/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0109 - my_iou_metric: 0.9319 - val_loss: 0.3422 - val_my_iou_metric: 0.8080

Epoch 00475: val_my_iou_metric did not improve from 0.81925

Epoch 476/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0112 - my_iou_metric: 0.9277 - val_loss: 0.2900 - val_my_iou_metric: 0.8136

Epoch 00476: val_my_iou_metric did not improve from 0.81925

Epoch 477/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0125 - my_iou_metric: 0.9246 - val_loss: 0.3052 - val_my_iou_metric: 0.8129

Epoch 00477: val_my_iou_metric did not improve from 0.81925

Epoch 478/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0124 - my_iou_metric: 0.9269 - val_loss: 0.2511 - val_my_iou_metric: 0.8060

Epoch 00478: val_my_iou_metric did not improve from 0.81925

Epoch 479/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0155 - my_iou_metric: 0.9192 - val_loss: 0.2145 - val_my_iou_metric: 0.8005

Epoch 00479: val_my_iou_metric did not improve from 0.81925

Epoch 480/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0166 - my_iou_metric: 0.9196 - val_loss: 0.2549 - val_my_iou_metric: 0.8070

Epoch 00480: val_my_iou_metric did not improve from 0.81925

Epoch 481/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0142 - my_iou_metric: 0.9231 - val_loss: 0.2769 - val_my_iou_metric: 0.7916

Epoch 00481: val_my_iou_metric did not improve from 0.81925
Epoch 482/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0117 - my_iou_metric: 0.9239 - val_loss: 0.3034 - val_my_iou_metric: 0.7984

Epoch 00482: val_my_iou_metric did not improve from 0.81925
Epoch 483/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0112 - my_iou_metric: 0.9287 - val_loss: 0.3211 - val_my_iou_metric: 0.8059

Epoch 00483: val_my_iou_metric did not improve from 0.81925
Epoch 484/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0109 - my_iou_metric: 0.9326 - val_loss: 0.3113 - val_my_iou_metric: 0.7971

Epoch 00484: val_my_iou_metric did not improve from 0.81925

Epoch 00484: ReduceLROnPlateau reducing learning rate to 0.0003550087008625269.

Epoch 485/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0110 - my_iou_metric: 0.9308 - val_loss: 0.3392 - val_my_iou_metric: 0.8030

Epoch 00485: val_my_iou_metric did not improve from 0.81925
Epoch 486/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0109 - my_iou_metric: 0.9307 - val_loss: 0.3145 - val_my_iou_metric: 0.8052

Epoch 00486: val_my_iou_metric did not improve from 0.81925
Epoch 487/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0108 - my_iou_metric: 0.9297 - val_loss: 0.3157 - val_my_iou_metric: 0.8021

Epoch 00487: val_my_iou_metric did not improve from 0.81925
Epoch 488/600
6400/6400 [=====] - 42s 6ms/step - loss: 0.0107 - my_iou_metric: 0.9332 - val_loss: 0.3161 - val_my_iou_metric: 0.8017

Epoch 00488: val_my_iou_metric did not improve from 0.81925
Epoch 489/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0109 - my_iou_metric: 0.9311 - val_loss: 0.3120 - val_my_iou_metric:

0.8075

Epoch 00489: val_my_iou_metric did not improve from 0.81925

Epoch 490/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0115 - my_iou_metric: 0.9295 - val_loss: 0.3007 - val_my_iou_metric: 0.8085

Epoch 00490: val_my_iou_metric did not improve from 0.81925

Epoch 491/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0139 - my_iou_metric: 0.9267 - val_loss: 0.2808 - val_my_iou_metric: 0.7899

Epoch 00491: val_my_iou_metric did not improve from 0.81925

Epoch 492/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0157 - my_iou_metric: 0.9195 - val_loss: 0.2385 - val_my_iou_metric: 0.8022

Epoch 00492: val_my_iou_metric did not improve from 0.81925

Epoch 493/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0117 - my_iou_metric: 0.9276 - val_loss: 0.2795 - val_my_iou_metric: 0.8072

Epoch 00493: val_my_iou_metric did not improve from 0.81925

Epoch 494/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0112 - my_iou_metric: 0.9308 - val_loss: 0.3070 - val_my_iou_metric: 0.8122

Epoch 00494: val_my_iou_metric did not improve from 0.81925

Epoch 00494: ReduceLROnPlateau reducing learning rate to 0.00034435843757819385.

Epoch 495/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0108 - my_iou_metric: 0.9327 - val_loss: 0.2939 - val_my_iou_metric: 0.8156

Epoch 00495: val_my_iou_metric did not improve from 0.81925

Epoch 496/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0107 - my_iou_metric: 0.9318 - val_loss: 0.2960 - val_my_iou_metric: 0.8097

Epoch 00496: val_my_iou_metric did not improve from 0.81925

Epoch 497/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0109 - my_iou_metric: 0.9326 - val_loss: 0.3033 - val_my_iou_metric:
0.8137

Epoch 00497: val_my_iou_metric did not improve from 0.81925

Epoch 498/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0114 - my_iou_metric: 0.9298 - val_loss: 0.3065 - val_my_iou_metric:
0.8135

Epoch 00498: val_my_iou_metric did not improve from 0.81925

Epoch 499/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0109 - my_iou_metric: 0.9317 - val_loss: 0.3136 - val_my_iou_metric:
0.8105

Epoch 00499: val_my_iou_metric did not improve from 0.81925

Epoch 500/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0108 - my_iou_metric: 0.9336 - val_loss: 0.3014 - val_my_iou_metric:
0.8039

Epoch 00500: val_my_iou_metric did not improve from 0.81925

Epoch 501/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0106 - my_iou_metric: 0.9332 - val_loss: 0.3152 - val_my_iou_metric:
0.8090

Epoch 00501: val_my_iou_metric did not improve from 0.81925

Epoch 502/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0107 - my_iou_metric: 0.9323 - val_loss: 0.3061 - val_my_iou_metric:
0.8080

Epoch 00502: val_my_iou_metric did not improve from 0.81925

Epoch 503/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.

0106 - my_iou_metric: 0.9326 - val_loss: 0.3331 - val_my_iou_metric:
0.8137

Epoch 00503: val_my_iou_metric did not improve from 0.81925

Epoch 504/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.

0106 - my_iou_metric: 0.9315 - val_loss: 0.3300 - val_my_iou_metric:
0.7946

Epoch 00504: val_my_iou_metric did not improve from 0.81925

Epoch 00504: ReduceLROnPlateau reducing learning rate to 0.000334027
6895323768.

Epoch 505/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9329 - val_loss: 0.3115 - val_my_iou_metric: 0.8069

Epoch 00505: val_my_iou_metric did not improve from 0.81925

Epoch 506/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0105 - my_iou_metric: 0.9328 - val_loss: 0.3150 - val_my_iou_metric: 0.8146

Epoch 00506: val_my_iou_metric did not improve from 0.81925

Epoch 507/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0105 - my_iou_metric: 0.9350 - val_loss: 0.3134 - val_my_iou_metric: 0.8066

Epoch 00507: val_my_iou_metric did not improve from 0.81925

Epoch 508/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0110 - my_iou_metric: 0.9310 - val_loss: 0.3082 - val_my_iou_metric: 0.8072

Epoch 00508: val_my_iou_metric did not improve from 0.81925

Epoch 509/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0109 - my_iou_metric: 0.9310 - val_loss: 0.3329 - val_my_iou_metric: 0.8113

Epoch 00509: val_my_iou_metric did not improve from 0.81925

Epoch 510/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0109 - my_iou_metric: 0.9316 - val_loss: 0.3378 - val_my_iou_metric: 0.8105

Epoch 00510: val_my_iou_metric did not improve from 0.81925

Epoch 511/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0116 - my_iou_metric: 0.9290 - val_loss: 0.3220 - val_my_iou_metric: 0.8070

Epoch 00511: val_my_iou_metric did not improve from 0.81925

Epoch 512/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0108 - my_iou_metric: 0.9285 - val_loss: 0.3209 - val_my_iou_metric: 0.8186

Epoch 00512: val_my_iou_metric did not improve from 0.81925

Epoch 513/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9340 - val_loss: 0.3223 - val_my_iou_metric:

0.8039

Epoch 00513: val_my_iou_metric did not improve from 0.81925

Epoch 514/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0106 - my_iou_metric: 0.9335 - val_loss: 0.3532 - val_my_iou_metric: 0.8045

Epoch 00514: val_my_iou_metric did not improve from 0.81925

Epoch 00514: ReduceLROnPlateau reducing learning rate to 0.0003240068582817912.

Epoch 515/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0105 - my_iou_metric: 0.9321 - val_loss: 0.3720 - val_my_iou_metric: 0.8039

Epoch 00515: val_my_iou_metric did not improve from 0.81925

Epoch 516/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0105 - my_iou_metric: 0.9332 - val_loss: 0.3482 - val_my_iou_metric: 0.8139

Epoch 00516: val_my_iou_metric did not improve from 0.81925

Epoch 517/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9336 - val_loss: 0.2939 - val_my_iou_metric: 0.8158

Epoch 00517: val_my_iou_metric did not improve from 0.81925

Epoch 518/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0113 - my_iou_metric: 0.9310 - val_loss: 0.3374 - val_my_iou_metric: 0.8153

Epoch 00518: val_my_iou_metric did not improve from 0.81925

Epoch 519/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9325 - val_loss: 0.3351 - val_my_iou_metric: 0.8197

Epoch 00519: val_my_iou_metric improved from 0.81925 to 0.81975, saving model to ./UNET_best_base_squeeze_07.model

Epoch 520/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9324 - val_loss: 0.3265 - val_my_iou_metric: 0.8224

Epoch 00520: val_my_iou_metric improved from 0.81975 to 0.82238, saving model to ./UNET_best_base_squeeze_07.model

Epoch 521/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9344 - val_loss: 0.3686 - val_my_iou_metric: 0.8031

Epoch 00521: val_my_iou_metric did not improve from 0.82238

Epoch 522/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0105 - my_iou_metric: 0.9326 - val_loss: 0.3751 - val_my_iou_metric: 0.8161

Epoch 00522: val_my_iou_metric did not improve from 0.82238

Epoch 523/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9323 - val_loss: 0.3623 - val_my_iou_metric: 0.8137

Epoch 00523: val_my_iou_metric did not improve from 0.82238

Epoch 524/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0115 - my_iou_metric: 0.9333 - val_loss: 0.3614 - val_my_iou_metric: 0.8244

Epoch 00524: val_my_iou_metric improved from 0.82238 to 0.82438, saving model to ./UNET_best_base_squeeze_07.model

Epoch 525/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0108 - my_iou_metric: 0.9325 - val_loss: 0.3284 - val_my_iou_metric: 0.8196

Epoch 00525: val_my_iou_metric did not improve from 0.82438

Epoch 526/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0113 - my_iou_metric: 0.9339 - val_loss: 0.3255 - val_my_iou_metric: 0.8177

Epoch 00526: val_my_iou_metric did not improve from 0.82438

Epoch 527/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0112 - my_iou_metric: 0.9305 - val_loss: 0.3015 - val_my_iou_metric: 0.8181

Epoch 00527: val_my_iou_metric did not improve from 0.82438

Epoch 528/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0116 - my_iou_metric: 0.9318 - val_loss: 0.2857 - val_my_iou_metric: 0.7921

Epoch 00528: val_my_iou_metric did not improve from 0.82438

Epoch 529/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0141 - my_iou_metric: 0.9277 - val_loss: 0.2833 - val_my_iou_metric: 0.8009

Epoch 00529: val_my_iou_metric did not improve from 0.82438
Epoch 530/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0116 - my_iou_metric: 0.9302 - val_loss: 0.3162 - val_my_iou_metric: 0.8101

Epoch 00530: val_my_iou_metric did not improve from 0.82438
Epoch 531/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0106 - my_iou_metric: 0.9299 - val_loss: 0.3322 - val_my_iou_metric: 0.8066

Epoch 00531: val_my_iou_metric did not improve from 0.82438
Epoch 532/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0105 - my_iou_metric: 0.9320 - val_loss: 0.3421 - val_my_iou_metric: 0.8063

Epoch 00532: val_my_iou_metric did not improve from 0.82438
Epoch 533/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0102 - my_iou_metric: 0.9347 - val_loss: 0.3445 - val_my_iou_metric: 0.8108

Epoch 00533: val_my_iou_metric did not improve from 0.82438
Epoch 534/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0101 - my_iou_metric: 0.9346 - val_loss: 0.3277 - val_my_iou_metric: 0.8161

Epoch 00534: val_my_iou_metric did not improve from 0.82438

Epoch 00534: ReduceLROnPlateau reducing learning rate to 0.0003142866559210233.

Epoch 535/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0106 - my_iou_metric: 0.9333 - val_loss: 0.3341 - val_my_iou_metric: 0.8129

Epoch 00535: val_my_iou_metric did not improve from 0.82438
Epoch 536/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0102 - my_iou_metric: 0.9352 - val_loss: 0.3347 - val_my_iou_metric: 0.8086

Epoch 00536: val_my_iou_metric did not improve from 0.82438

Epoch 537/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9312 - val_loss: 0.3768 - val_my_iou_metric: 0.8146

Epoch 00537: val_my_iou_metric did not improve from 0.82438

Epoch 538/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0102 - my_iou_metric: 0.9352 - val_loss: 0.3869 - val_my_iou_metric: 0.8100

Epoch 00538: val_my_iou_metric did not improve from 0.82438

Epoch 539/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0102 - my_iou_metric: 0.9351 - val_loss: 0.3373 - val_my_iou_metric: 0.8131

Epoch 00539: val_my_iou_metric did not improve from 0.82438

Epoch 540/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0101 - my_iou_metric: 0.9347 - val_loss: 0.3507 - val_my_iou_metric: 0.8176

Epoch 00540: val_my_iou_metric did not improve from 0.82438

Epoch 541/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0134 - my_iou_metric: 0.9279 - val_loss: 0.3012 - val_my_iou_metric: 0.8131

Epoch 00541: val_my_iou_metric did not improve from 0.82438

Epoch 542/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0104 - my_iou_metric: 0.9349 - val_loss: 0.3395 - val_my_iou_metric: 0.8055

Epoch 00542: val_my_iou_metric did not improve from 0.82438

Epoch 543/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0105 - my_iou_metric: 0.9313 - val_loss: 0.3024 - val_my_iou_metric: 0.8120

Epoch 00543: val_my_iou_metric did not improve from 0.82438

Epoch 544/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0102 - my_iou_metric: 0.9340 - val_loss: 0.3241 - val_my_iou_metric: 0.8099

Epoch 00544: val_my_iou_metric did not improve from 0.82438

Epoch 00544: ReduceLROnPlateau reducing learning rate to 0.000304858

0486210994.

Epoch 545/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0102 - my_iou_metric: 0.9338 - val_loss: 0.3373 - val_my_iou_metric: 0.8137

Epoch 00545: val_my_iou_metric did not improve from 0.82438

Epoch 546/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0100 - my_iou_metric: 0.9357 - val_loss: 0.3373 - val_my_iou_metric: 0.8105

Epoch 00546: val_my_iou_metric did not improve from 0.82438

Epoch 547/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0101 - my_iou_metric: 0.9351 - val_loss: 0.3219 - val_my_iou_metric: 0.8117

Epoch 00547: val_my_iou_metric did not improve from 0.82438

Epoch 548/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0102 - my_iou_metric: 0.9348 - val_loss: 0.3571 - val_my_iou_metric: 0.8085

Epoch 00548: val_my_iou_metric did not improve from 0.82438

Epoch 549/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0100 - my_iou_metric: 0.9360 - val_loss: 0.3756 - val_my_iou_metric: 0.8098

Epoch 00549: val_my_iou_metric did not improve from 0.82438

Epoch 550/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0100 - my_iou_metric: 0.9367 - val_loss: 0.3660 - val_my_iou_metric: 0.8061

Epoch 00550: val_my_iou_metric did not improve from 0.82438

Epoch 551/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0099 - my_iou_metric: 0.9370 - val_loss: 0.3337 - val_my_iou_metric: 0.8105

Epoch 00551: val_my_iou_metric did not improve from 0.82438

Epoch 552/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0100 - my_iou_metric: 0.9369 - val_loss: 0.3809 - val_my_iou_metric: 0.8113

Epoch 00552: val_my_iou_metric did not improve from 0.82438

Epoch 553/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0101 - my_iou_metric: 0.9367 - val_loss: 0.3617 - val_my_iou_metric: 0.8120

Epoch 00553: val_my_iou_metric did not improve from 0.82438
Epoch 554/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0098 - my_iou_metric: 0.9354 - val_loss: 0.3592 - val_my_iou_metric: 0.8151

Epoch 00554: val_my_iou_metric did not improve from 0.82438

Epoch 00554: ReduceLROnPlateau reducing learning rate to 0.0002957123130909167.

Epoch 555/600

6400/6400 [=====] - 42s 7ms/step - loss: 0.0100 - my_iou_metric: 0.9329 - val_loss: 0.3491 - val_my_iou_metric: 0.8117

Epoch 00555: val_my_iou_metric did not improve from 0.82438

Epoch 556/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0099 - my_iou_metric: 0.9378 - val_loss: 0.3488 - val_my_iou_metric: 0.8150

Epoch 00556: val_my_iou_metric did not improve from 0.82438

Epoch 557/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0098 - my_iou_metric: 0.9382 - val_loss: 0.3752 - val_my_iou_metric: 0.8100

Epoch 00557: val_my_iou_metric did not improve from 0.82438

Epoch 558/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0099 - my_iou_metric: 0.9374 - val_loss: 0.3539 - val_my_iou_metric: 0.8071

Epoch 00558: val_my_iou_metric did not improve from 0.82438

Epoch 559/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0099 - my_iou_metric: 0.9380 - val_loss: 0.3564 - val_my_iou_metric: 0.8093

Epoch 00559: val_my_iou_metric did not improve from 0.82438

Epoch 560/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0099 - my_iou_metric: 0.9343 - val_loss: 0.3704 - val_my_iou_metric: 0.8144

Epoch 00560: val_my_iou_metric did not improve from 0.82438

Epoch 561/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0100 - my_iou_metric: 0.9351 - val_loss: 0.3983 - val_my_iou_metric: 0.7983

Epoch 00561: val_my_iou_metric did not improve from 0.82438

Epoch 562/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0108 - my_iou_metric: 0.9314 - val_loss: 0.3270 - val_my_iou_metric: 0.8090

Epoch 00562: val_my_iou_metric did not improve from 0.82438

Epoch 563/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0100 - my_iou_metric: 0.9354 - val_loss: 0.3439 - val_my_iou_metric: 0.8095

Epoch 00563: val_my_iou_metric did not improve from 0.82438

Epoch 564/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0117 - my_iou_metric: 0.9302 - val_loss: 0.2900 - val_my_iou_metric: 0.8065

Epoch 00564: val_my_iou_metric did not improve from 0.82438

Epoch 00564: ReduceLROnPlateau reducing learning rate to 0.00028684095188509674.

Epoch 565/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0106 - my_iou_metric: 0.9316 - val_loss: 0.3084 - val_my_iou_metric: 0.8119

Epoch 00565: val_my_iou_metric did not improve from 0.82438

Epoch 566/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0128 - my_iou_metric: 0.9291 - val_loss: 0.3312 - val_my_iou_metric: 0.8064

Epoch 00566: val_my_iou_metric did not improve from 0.82438

Epoch 567/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0110 - my_iou_metric: 0.9301 - val_loss: 0.2996 - val_my_iou_metric: 0.8065

Epoch 00567: val_my_iou_metric did not improve from 0.82438

Epoch 568/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0112 - my_iou_metric: 0.9347 - val_loss: 0.3096 - val_my_iou_metric: 0.8006

Epoch 00568: val_my_iou_metric did not improve from 0.82438

Epoch 569/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0103 - my_iou_metric: 0.9352 - val_loss: 0.3396 - val_my_iou_metric: 0.8029

Epoch 00569: val_my_iou_metric did not improve from 0.82438

Epoch 570/600

6400/6400 [=====] - 42s 6ms/step - loss: 0.0099 - my_iou_metric: 0.9370 - val_loss: 0.3309 - val_my_iou_metric: 0.8130

Epoch 00570: val_my_iou_metric did not improve from 0.82438

Epoch 571/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0097 - my_iou_metric: 0.9372 - val_loss: 0.3581 - val_my_iou_metric: 0.8081

Epoch 00571: val_my_iou_metric did not improve from 0.82438

Epoch 572/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0098 - my_iou_metric: 0.9361 - val_loss: 0.3520 - val_my_iou_metric: 0.8081

Epoch 00572: val_my_iou_metric did not improve from 0.82438

Epoch 573/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0097 - my_iou_metric: 0.9374 - val_loss: 0.3461 - val_my_iou_metric: 0.8032

Epoch 00573: val_my_iou_metric did not improve from 0.82438

Epoch 574/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0096 - my_iou_metric: 0.9376 - val_loss: 0.3460 - val_my_iou_metric: 0.8086

Epoch 00574: val_my_iou_metric did not improve from 0.82438

Epoch 00574: ReduceLROnPlateau reducing learning rate to 0.0002782357216347009.

Epoch 575/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0097 - my_iou_metric: 0.9375 - val_loss: 0.3405 - val_my_iou_metric: 0.8101

Epoch 00575: val_my_iou_metric did not improve from 0.82438

Epoch 576/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.0096 - my_iou_metric: 0.9368 - val_loss: 0.3915 - val_my_iou_metric: 0.8066

Epoch 00576: val_my_iou_metric did not improve from 0.82438
Epoch 577/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0096 - my_iou_metric: 0.9374 - val_loss: 0.3303 - val_my_iou_metric: 0.8059

Epoch 00577: val_my_iou_metric did not improve from 0.82438
Epoch 578/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0095 - my_iou_metric: 0.9377 - val_loss: 0.3357 - val_my_iou_metric: 0.8140

Epoch 00578: val_my_iou_metric did not improve from 0.82438
Epoch 579/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0098 - my_iou_metric: 0.9382 - val_loss: 0.3784 - val_my_iou_metric: 0.7991

Epoch 00579: val_my_iou_metric did not improve from 0.82438
Epoch 580/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0098 - my_iou_metric: 0.9376 - val_loss: 0.3821 - val_my_iou_metric: 0.8076

Epoch 00580: val_my_iou_metric did not improve from 0.82438
Epoch 581/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0097 - my_iou_metric: 0.9373 - val_loss: 0.3791 - val_my_iou_metric: 0.8117

Epoch 00581: val_my_iou_metric did not improve from 0.82438
Epoch 582/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0096 - my_iou_metric: 0.9388 - val_loss: 0.3842 - val_my_iou_metric: 0.8106

Epoch 00582: val_my_iou_metric did not improve from 0.82438
Epoch 583/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0096 - my_iou_metric: 0.9384 - val_loss: 0.3693 - val_my_iou_metric: 0.8085

Epoch 00583: val_my_iou_metric did not improve from 0.82438
Epoch 584/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0095 - my_iou_metric: 0.9385 - val_loss: 0.3897 - val_my_iou_metric: 0.7964

Epoch 00584: val_my_iou_metric did not improve from 0.82438

Epoch 00584: ReduceLROnPlateau reducing learning rate to 0.000269888
66127794606.

Epoch 585/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0098 - my_iou_metric: 0.9381 - val_loss: 0.3698 - val_my_iou_metric:
0.8020

Epoch 00585: val_my_iou_metric did not improve from 0.82438

Epoch 586/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0126 - my_iou_metric: 0.9318 - val_loss: 0.3146 - val_my_iou_metric:
0.8066

Epoch 00586: val_my_iou_metric did not improve from 0.82438

Epoch 587/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0101 - my_iou_metric: 0.9351 - val_loss: 0.3313 - val_my_iou_metric:
0.8060

Epoch 00587: val_my_iou_metric did not improve from 0.82438

Epoch 588/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0096 - my_iou_metric: 0.9375 - val_loss: 0.3445 - val_my_iou_metric:
0.8116

Epoch 00588: val_my_iou_metric did not improve from 0.82438

Epoch 589/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0097 - my_iou_metric: 0.9374 - val_loss: 0.3771 - val_my_iou_metric:
0.8101

Epoch 00589: val_my_iou_metric did not improve from 0.82438

Epoch 590/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0096 - my_iou_metric: 0.9380 - val_loss: 0.3605 - val_my_iou_metric:
0.8058

Epoch 00590: val_my_iou_metric did not improve from 0.82438

Epoch 591/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0094 - my_iou_metric: 0.9380 - val_loss: 0.3806 - val_my_iou_metric:
0.8080

Epoch 00591: val_my_iou_metric did not improve from 0.82438

Epoch 592/600

6400/6400 [=====] - 41s 6ms/step - loss: 0.
0102 - my_iou_metric: 0.9352 - val_loss: 0.3656 - val_my_iou_metric:
0.8071

Epoch 00592: val_my_iou_metric did not improve from 0.82438
Epoch 593/600
6400/6400 [=====] - 42s 7ms/step - loss: 0.0095 - my_iou_metric: 0.9387 - val_loss: 0.3639 - val_my_iou_metric: 0.8095

Epoch 00593: val_my_iou_metric did not improve from 0.82438
Epoch 594/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0094 - my_iou_metric: 0.9396 - val_loss: 0.3753 - val_my_iou_metric: 0.8132

Epoch 00594: val_my_iou_metric did not improve from 0.82438

Epoch 00594: ReduceLROnPlateau reducing learning rate to 0.00026179200736805794.

Epoch 595/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0095 - my_iou_metric: 0.9389 - val_loss: 0.3825 - val_my_iou_metric: 0.8034

Epoch 00595: val_my_iou_metric did not improve from 0.82438
Epoch 596/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0094 - my_iou_metric: 0.9402 - val_loss: 0.3808 - val_my_iou_metric: 0.8074

Epoch 00596: val_my_iou_metric did not improve from 0.82438
Epoch 597/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0094 - my_iou_metric: 0.9391 - val_loss: 0.3543 - val_my_iou_metric: 0.8050

Epoch 00597: val_my_iou_metric did not improve from 0.82438
Epoch 598/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0095 - my_iou_metric: 0.9374 - val_loss: 0.3675 - val_my_iou_metric: 0.8089

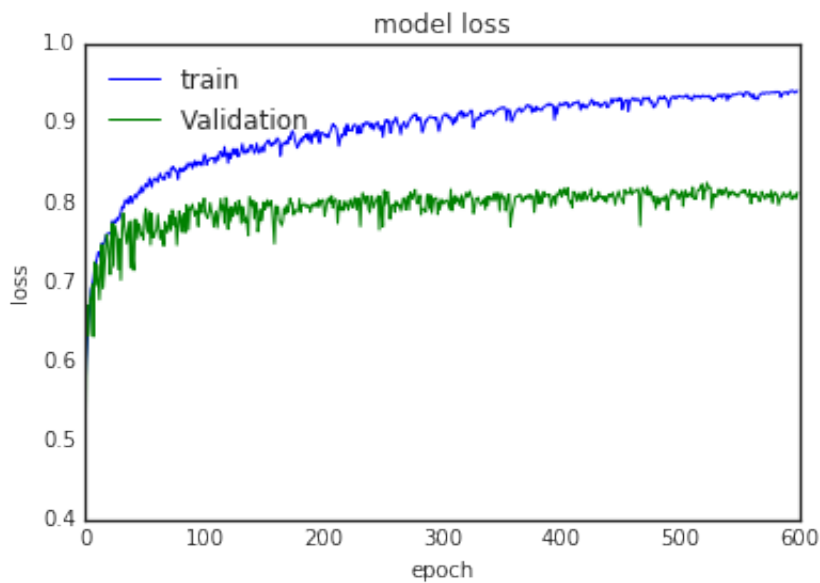
Epoch 00598: val_my_iou_metric did not improve from 0.82438
Epoch 599/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0093 - my_iou_metric: 0.9387 - val_loss: 0.3418 - val_my_iou_metric: 0.8047

Epoch 00599: val_my_iou_metric did not improve from 0.82438
Epoch 600/600
6400/6400 [=====] - 41s 6ms/step - loss: 0.0095 - my_iou_metric: 0.9400 - val_loss: 0.3890 - val_my_iou_metric: 0.8121

Epoch 00600: val_my_iou_metric did not improve from 0.82438

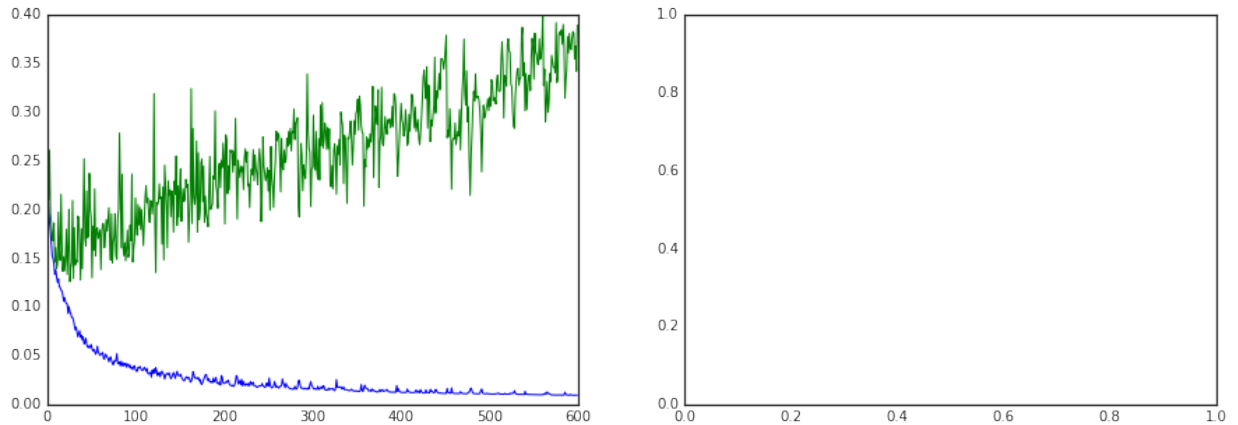
```
In [17]: #from tensorflow.python.client import device_lib  
#print(device_lib.list_local_devices())
```

```
In [18]: # summarize history for loss  
plt.plot(history.history['my_iou_metric'][1:])  
plt.plot(history.history['val_my_iou_metric'][1:])  
plt.title('model loss')  
plt.ylabel('loss')  
plt.xlabel('epoch')  
plt.legend(['train', 'Validation'], loc='upper left')  
plt.show()
```




```
In [19]: fig, (ax_loss, ax_acc) = plt.subplots(1, 2, figsize=(15,5))
ax_loss.plot(history.epoch, history.history["loss"], label="Train loss")
ax_loss.plot(history.epoch, history.history["val_loss"], label="Validation loss")
```

```
Out[19]: [<matplotlib.lines.Line2D at 0x7f8b776617b8>]
```



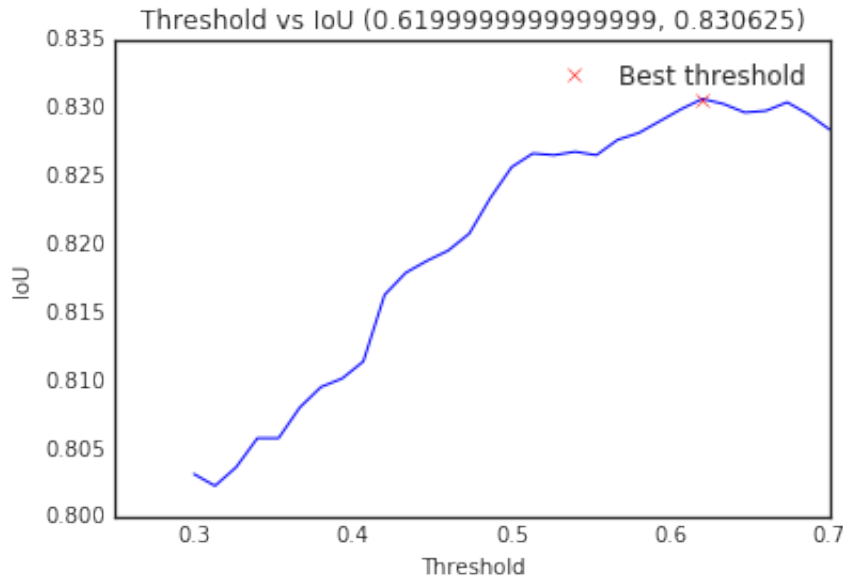
```
In [20]: preds_valid = predict_result(model,x_valid,img_size_target)
preds_valid2 = np.array([downsample(x) for x in preds_valid])

y_valid2 = np.array([downsample(x) for x in y_valid])
```

```
In [21]: ## Scoring for last model
thresholds = np.linspace(0.3, 0.7, 31)
ious = np.array([iou_metric_batch(y_valid2, np.int32(preds_valid2 > threshold)) for threshold in tqdm_notebook(thresholds)])
threshold_best_index = np.argmax(ious)
iou_best = ious[threshold_best_index]
threshold_best = thresholds[threshold_best_index]
```

```
In [22]: # Plot threshold and iou
plt.plot(thresholds, ious)
plt.plot(threshold_best, iou_best, "xr", label="Best threshold")
plt.xlabel("Threshold")
plt.ylabel("IoU")
plt.title("Threshold vs IoU ({}, {})".format(threshold_best, iou_best)
)
plt.legend()
```

Out[22]: <matplotlib.legend.Legend at 0x7f8b751cac88>



```
In [23]: x_test = np.load("x_test.npy")
```

```
In [24]: preds_test = predict_result(model, x_test, img_size_target)
```

```
In [25]: #test = pd.read_hdf(DATA_DIR + "tgs_salt.h5", key="test")
# load test indexes
import _pickle
with open("test_index.obj", "rb") as f:
    indexes = _pickle.load(f)
```

```
In [26]: t1 = time.time()
pred_dict = {idx: rle_encode(np.round(downsample(preds_test[i]) > threshold_best)) for i, idx in enumerate(tqdm_notebook(indexes))}
t2 = time.time()

#print(f "Usedtime = {t2-t1} s")
```

```
In [27]: sub = pd.DataFrame.from_dict(pred_dict,orient="index")
sub.index.names = ["id"]
sub.columns = ["rle_mask"]
sub.to_csv("submission_best_base_squeeze_0.7_600.csv")
```