Lab: Solution - Traffic Sign Inference

```
"""
The traffic signs are 32x32 so you
have to resize them to be 227x227 before
passing them to AlexNet.
"""
import time
import tensorflow as tf
import numpy as np
from scipy.misc import imread
from caffe_classes import class_names
from alexnet import AlexNet


# placeholders
x = tf.placeholder(tf.float32, (None, 32, 32, 3))
resized = tf.image.resize_images(x, (227, 227))

probs = AlexNet(resized)
init = tf.initialize_all_variables()
sess = tf.Session()
sess.run(init)

# Read Images
im1 = imread("construction.jpg").astype(np.float32)
im1 = im1 - np.mean(im1)

im2 = imread("stop.jpg").astype(np.float32)
im2 = im2 - np.mean(im2)

# Run Inference
```

```
t = time.time()
output = sess.run(probs, feed_dict={x: [im1, im2]})

# Print Output
for input_im_ind in range(output.shape[0]):
    inds = np.argsort(output)[input_im_ind, :]
    print("Image", input_im_ind)
    for i in range(5):
        print("%s: %.3f" % (class_names[inds[-1 - i]], output[input
_im_ind, inds[-1 - i]]))
    print()

print("Time: %.3f seconds" % (time.time() - t))
```

The notable part being:

```
x = tf.placeholder(tf.float32, (None, 32, 32, 3))
resized = tf.image.resize_images(x, (227, 227))
```

AlexNet requires images be 227 by 227. So, we use `tf.image.resize_images` resize the 32 by 32 traffic sign images.

NEXT