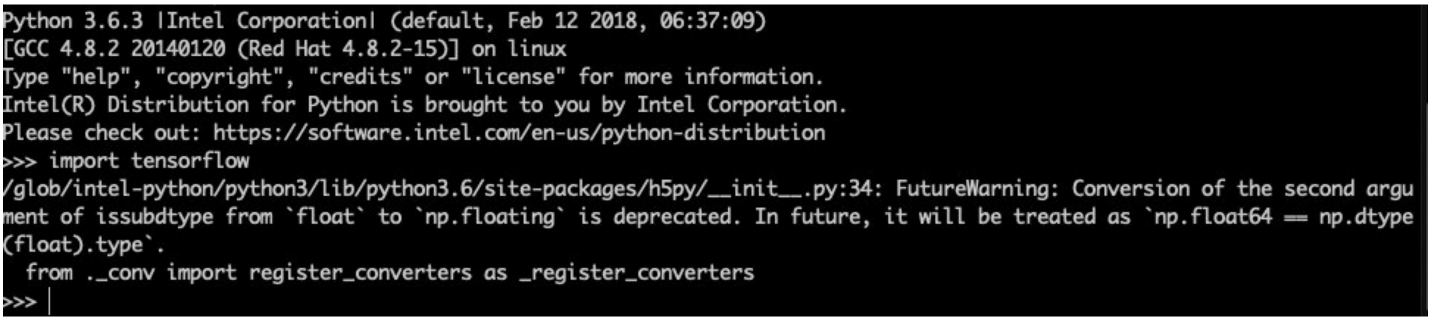
1.TensorFlow环境搭建



```
Python 3.6.3 |Intel Corporation| (default, Feb 12 2018, 06:37:09)
[GCC 4.8.2 20140120 (Red Hat 4.8.2-15)] on linux
Type "help", "copyright", "credits" or "license" for more information.
Intel(R) Distribution for Python is brought to you by Intel Corporation.
Please check out: https://software.intel.com/en-us/python-distribution
>>> import tensorflow
/glob/intel-python/python3/lib/python3.6/site-packages/h5py/__init__.py:34: FutureWarning: Conversion of the second argu
ment of issubdtype from `float` to `np.floating` is deprecated. In future, it will be treated as `np.float64 == np.dtype
(float).type`.
  from ._conv import register_converters as _register_converters
>>> |
```

2.使用TensorFlow做线性回归

```
import tensorflow as tf
import numpy as np
from numpy.random import RandomState
```

```
#随机生成100*100的原始数据
x_data = np.float32(np.random.rand(100, 100))
rdm = RandomState(100)
#随机生成1*100的权重
w_data = rdm.uniform(0, 1, (1, 100))[0].tolist()
#根据生成的原始数据和权重生成真实的输出数据
y_data = np.dot(w_data, x_data) + 0.3

b = tf.Variable(tf.zeros([1]))
W = tf.Variable(tf.random_uniform([1, 100], -1.0, 1.0))
y = tf.matmul(W, x_data) + b

loss = tf.reduce_mean(tf.square(y - y_data))
optimizer = tf.train.GradientDescentOptimizer(0.005).minimize(loss)

init = tf.global_variables_initializer()
sess = tf.Session()
sess.run(init)
#print(y_data)
print("迭代数，误差")
for step in range(0, 8001):
    sess.run(optimizer)
    if step % 200 == 0:
        print (step, sess.run(loss))
```

```
迭代数，误差
0 293.79
200 1.87386
400 1.0386
600 0.655824
800 0.460812
1000 0.350574
1200 0.282046
1400 0.235846
1600 0.20259
1800 0.177399
2000 0.15756
2200 0.141465
2400 0.128108
2600 0.116824
2800 0.107155
3000 0.0987735
3200 0.091438
3400 0.0849662
3600 0.0792162
3800 0.0740765
4000 0.0694577
4200 0.0652867
4400 0.0615044
4600 0.0580606
4800 0.054914
5000 0.0520301
5200 0.0493781
5400 0.0469331
5600 0.0446729
5800 0.0425785
6000 0.0406329
6200 0.0388219
6400 0.0371331
6600 0.0355546
6800 0.034077
7000 0.0326909
7200 0.0313891
7400 0.0301644
7600 0.0290105
7800 0.0279218
8000 0.0268933
```