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Branch: master coursera / coursera\_ai / week2 / tensorflow / tfintro.ipynb

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c9853c3 on Jun 21

1 contributor

178 lines (177 sloc) 20.4 KB

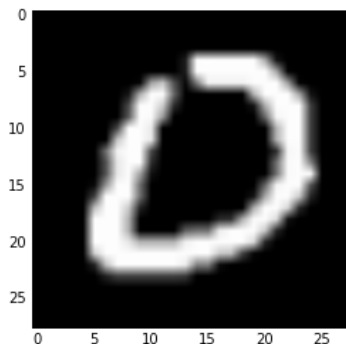
```
In [18]: from tensorflow.examples.tutorials.mnist import input_data
mnist = input_data.read_data_sets("MNIST_data/", one_hot=True)
```

```
Extracting MNIST_data/train-images-idx3-ubyte.gz
Extracting MNIST_data/train-labels-idx1-ubyte.gz
Extracting MNIST_data/t10k-images-idx3-ubyte.gz
Extracting MNIST_data/t10k-labels-idx1-ubyte.gz
```

```
In [13]: import tensorflow as tf
```

```
In [17]: %matplotlib inline
import matplotlib.pyplot as plt
batch_xs, batch_ys = mnist.train.next_batch(1)
X = batch_xs
X = X.reshape([28, 28]);
plt.gray()
plt.imshow(X)
```

```
Out[17]: <matplotlib.image.AxesImage at 0x7f4c025d9910>
```



```
In [19]: x = tf.placeholder(tf.float32, [None, 784])
W = tf.Variable(tf.zeros([784, 10]))
b = tf.Variable(tf.zeros([10]))
y = tf.nn.softmax(tf.matmul(x, W) + b)
```

```
In [20]: y_ = tf.placeholder(tf.float32, [None, 10])
cross_entropy = tf.reduce_mean(-tf.reduce_sum(y_ * tf.log(y), reduction_indices=[1]))
train_step = tf.train.GradientDescentOptimizer(0.5).minimize(cross_entropy)
sess = tf.InteractiveSession()
```

```
In [21]: tf.global_variables_initializer().run()
```

```
In [22]: for _ in range(1000):
    batch_xs, batch_ys = mnist.train.next_batch(100)
    sess.run(train_step, feed_dict={x: batch_xs, y_: batch_ys})
```

```
In [23]: correct_prediction = tf.equal(tf.argmax(y,1), tf.argmax(y_,1))
```

```
In [24]: accuracy = tf.reduce_mean(tf.cast(correct_prediction, tf.float32))
```

```
In [25]: print(sess.run(accuracy, feed_dict={x: mnist.test.images, y_: mnist.test.labels}))
0.9202
```

```
In [ ]:
```