Table 9-1. Open source Deep Learning libraries (not an exhaustive list)

Library	API	Platforms	Started by	Year
Caffe	Python, C++, Matlab	Linux, macOS, Windows	Y. Jia, UC Berkeley (BVLC)	2013
Deeplearning4j	Java, Scala, Clojure	Linux, macOS, Windows, Android	A. Gibson, J.Patterson	2014
H2O	Python, R	Linux, macOS, Windows	H2O.ai	2014
MXNet	Python, C++, others	Linux, macOS, Windows, iOS, Android	DMLC	2015
TensorFlow	Python, C++	Linux, macOS, Windows, iOS, Android	Google	2015
Theano	Python	Linux, macOS, iOS	University of Montreal	2010
Torch	C++, Lua	Linux, macOS, iOS, Android	R. Collobert, K. Kavukcuoglu, C. Farabet	2002

Installation

Let's get started! Assuming you installed Jupyter and Scikit-Learn by following the installation instructions in Chapter 2, you can simply use pip to install TensorFlow. If you created an isolated environment using virtualenv, you first need to activate it:

```
$ cd $ML_PATH               # Your ML working directory (e.g., $HOME/ml)
$ source env/bin/activate
```

Next, install TensorFlow:

```
$ pip3 install --upgrade tensorflow
```

For GPU support, you need to install `tensorflow-gpu` instead of `tensorflow`. See Chapter 12 for more details.

To test your installation, type the following command. It should output the version of TensorFlow you installed.

```
$ python3 -c 'import tensorflow; print(tensorflow.__version__)'
1.0.0
```

Creating Your First Graph and Running It in a Session

The following code creates the graph represented in Figure 9-1:

```
import tensorflow as tf

x = tf.Variable(3, name="x")
y = tf.Variable(4, name="y")
f = x*x*y + y + 2
```