

4 Install TensorFlow:

- a TensorFlow with or without GPU support can be installed from PyPI using Pip. Here's the command without GPU support:

```
$ sudo pip install tensorflow
```

- b Here's the command to install TensorFlow with GPU support:

```
$ sudo pip install tensorflow-gpu
```

A.3 Installing Theano (optional)

Because you've already installed TensorFlow, you don't have to install Theano in order to run Keras code. But it can sometimes be useful to switch back and forth from TensorFlow to Theano when building Keras models.

Theano can also be installed from PyPI:

```
$ sudo pip install theano
```

If you're using a GPU, then you should configure Theano to use your GPU. You can create a Theano configuration file with this command:

```
nano ~/.theanorc
```

Then, fill in the file with the following configuration:

```
[global]
floatX = float32
device = gpu0

[rvcc]
fastmath = True
```

A.4 Installing Keras

You can install Keras from PyPI:

```
$ sudo pip install keras
```

Alternatively, you can install Keras from GitHub. Doing so will allow you to access the `keras/examples` folder, which contains many example scripts for you to learn from:

```
$ git clone https://github.com/fchollet/keras
$ cd keras
$ sudo python setup.py install
```

You can now try to run a Keras script, such as this MNIST example:

```
python examples/mnist_cnn.py
```

Note that running this example to completion may take a few minutes, so feel free to force-quit it (Ctrl-C) once you've verified that it's working normally.

After you've run Keras at least once, the Keras configuration file can be found at `~/.keras/keras.json`. You can edit it to select the backend that Keras runs on: `tensorflow`, `theano`, or `cntk`. Your configuration file should like this: