Pre-requisites

- Python Programming
- Basic idea about how Neural Networks work
- What is Deep Learning
- Some of the important classification ML models – Logistic Regression, SVM, KNN, etc.

Getting Started

The following are the types of tensorflow supports available to install:

- TensorFlow with **CPU support**
- TensorFlow with **GPU support**

Although, the version with CPU support is recommended to install first as it is much convenient and easy to use.

How to install Tensorflow

The supported choices available are as follows:

- *"native" pip*
- *Anaconda*

Installing on Ubuntu

- ### Using native pip

Python is automatically installed on Ubuntu. Take a moment to confirm (by issuing a **python -V** command) that one of the following Python versions is already installed on your system:

- Python 2.7
- Python 3.3 +

The pip or pip3 package manager isusually installed on Ubuntu. We strongly recommend version 8.1 or higher of pip or pip3.

```
$ sudo apt-get install python-pip python-dev   # for Python 2.7
$ sudo apt-get install python3-pip python3-dev # for Python 3.n
```

Assuming the prerequisite software is installed on your Linux host, take the following steps:
Install TensorFlow by invoking **one** of the following commands:

```
$ pip install tensorflow      # Python 2.7; CPU support (no GPU support)
$ pip3 install tensorflow     # Python 3.n; CPU support (no GPU support)
```

To uninstall TensorFlow, issue one of following commands:

```
$ sudo pip uninstall tensorflow  # for Python 2.7
$ sudo pip3 uninstall tensorflow # for Python 3.n
```

- ## Using Anaconda

Take the following steps to install TensorFlow in an Anaconda environment:

1. Download and install Anaconda 4.2.0 which comes with Python 3.5
   https://repo.continuum.io/archive/Anaconda3-4.2.0-Linux-x86_64.sh

2. Create a conda environment named tensorflow to run a version of Python by invoking the following command:

```
$ conda create -n tensorflow
```

3. Activate the conda environment by issuing the following command:

```
$ source activate tensorflow
(tensorflow)$  # Your prompt should change
```

4. Issue a command of the following format to install TensorFlow inside your conda environment. The following command installs the CPU-only version of TensorFlow for Python 3.5:

```
(tensorflow)$ pip install --ignore-installed –upgrade
https://storage.googleapis.com/tensorflow/linux/cpu/tensorflow-1.2.1-cp35-cp35-
linux_x86_64.whl
```

Installing on Windows

- ### Using native pip

  If the following version of Python is not installed on your machine, install it now:

  - Python 3.5.x from python.org

  TensorFlow only supports version 3.5.x of Python on Windows. Note that Python 3.5.x comes with the pip3 package manager, which is the program you'll use to install TensorFlow.

  To install the CPU-only version of TensorFlow, enter the following command:

```
C:\> pip3 install --upgrade tensorflow
```

- ### Using Anaconda

  Take the following steps to install TensorFlow in an Anaconda environment:

  1. Download and install Anaconda 4.2.0 which comes with Python 3.5
     https://repo.continuum.io/archive/Anaconda3-4.2.0-Windows-x86_64.exe

  2. Create a conda environment named tensorflow by invoking the following command:

```
C:> conda create -n tensorflow python=3.5
```

  3. Activate the conda environment by issuing the following command:

```
C:> activate tensorflow
(tensorflow)C:>  # Your prompt should change
```

  4. Issue the appropriate command to install TensorFlow inside your conda environment. To install the CPU-only version of TensorFlow, enter the following command:

```
(tensorflow)C:> pip install --ignore-installed –upgrade
https://storage.googleapis.com/tensorflow/windows/cpu/tensorflow-1.2.1-cp35-cp35m-
win_amd64.whl
```

Validate your Installation

- Start a terminal.
- Invoke python from your shell as follows:

```
$ python
```

- Enter the following short program inside the python interactive shell:

```
>>> import tensorflow as tf
>>> hello = tf.constant('Hello, TensorFlow!'
>>> sess = tf.Session()
>>> print(sess.run(hello))
```

If the system outputs the following, then you are ready to begin writing TensorFlow programs:

```
Hello, TensorFlow!
```

References

- **https://www.tensorflow.org/**
- **https://github.com/tensorflow/tensorflow/**
- **'TensorFlow in 5 minutes': https://www.youtube.com/watch?v=2FmcHiLCwTU**
- **'Learning TensorFlow': https://learningtensorflow.com/**
- **'Big Data University' course: https://cognitiveclass.ai/courses/deep-learning-tensorflow/**

Follow my Github respository: https://github.com/gargraghav/tensorflow/