

# 1 Installing Tensorflow on Windows

This document will give you a brief guideline on how to install and setup Tensorflow for the remaining exercise sessions.

It should be noted that this document only guides you to install Tensorflow on Windows, and with the assumption that you have successfully installed and setuped Anaconda, as in the first lab session. If you are using Linux/Mac or you don't want to use Anaconda, you can look up online for Tensorflow installation guidelines for your specific environments.

## 1.1 Create Virtual Environment for Python 3.x

Virtual environment is a very useful feature in Anaconda (also available in other Python distribution). It allows you to separate your working environments for different projects. By keeping the two environments separated, you will avoid messing up with different versions of the installed libraries.

We have been using Python 2.x so far for all the previous exercises. However, in Windows, Tensorflow requires Python from version 3.5. As a solution, we will create a virtual environment, with Python 3.5 to work with Tensorflow. To create a virtual environment, named *tensorflow*, with Python 3.5, you need to open Command Prompt and type:

```
conda create -n tensorflow python=3.5
```

## 1.2 Activate the Virtual Environment

To activate the newly created virtual environment (i.e. to open and use it), type:

```
source activate tensorflow
```

Here, *tensorflow* is the name of the virtual environment we created in the previous step. You can select whatever name you like.

## 1.3 Install Tensorflow inside the Virtual Environment

After activating the virtual environment in the previous step, you can install tensorflow using pip.

**pip install --ignore-installed --upgrade tensorflow**

Note that this command will install the CPU version of tensorflow. If you have a Nvidia graphic card, with CUDA installed, it is recommended to install the GPU version of tensorflow instead, to utilize the computing of your graphic card.

For a more detailed installation guideline, you can check the following link: <https://www.tensorflow.org/install/>

## **1.4 Install iPython3**

We will use ipython3 instead of ipython2 to work with tensorflow in the notebooks. You will need to install ipython3 first, by:

**pip install ipython[all]**

To open exercise notebooks in ipython3, you will need to run:

**ipython3 notebook**

## **1.5 Deactivate the Virtual Environment**

After finish the exercises, you may want to switch to an other virtual environment. You will first need to *deactivate* you current virtual environment. This can be done by:

**source deactivate**

# **2 Installing Necessary Libraries**

Besides Tensorflow, other libraries are also required for the exercises. Run the following command, with the *tensorflow* virtual environment activated to install them:

**pip install scipy**  
**pip install sklearn**  
**pip install matplotlib**