



# Python 培训第一期

By 李亚军

# 目录

---

应用领域

Python2 和 Python3

环境配置

基本语法

# 应用领域

- Web 开发: Django, Pyramid, Bottle, Tornado, Flask, web2py
- GUI 开发: tkinter, PyGObject, PyQt, PySide, Kivy, wxPython
- 科学计算: SciPy, Pandas, IPython
- 软件开发: Buildbot, Trac, Roundup
- 系统管理: Ansible, Salt, OpenStack

# Python2 和 Python3

- Python 3.6.0 和 Python 2.7.13
- `print`
- Integer division
- Unicode
- Parsing user input

# Python2 と Python3 - print

- Python2

- `print 'Hello, World!'`

- Hello, World!

- Python3

- `print('Hello, World!')`

- Hello, World!

# Python2 と Python3 - Integer division

- Python2

- `print '3 / 2 =', 3 / 2`
- `print '3 // 2 =', 3 // 2`
- `print '3 / 2.0 =', 3 / 2.0`
- `print '3 // 2.0 =', 3 // 2.0`

- $3 / 2 = 1$

- $3 // 2 = 1$
- $3 / 2.0 = 1.5$
- $3 // 2.0 = 1.0$

- Python3

- `print('3 / 2 =', 3 / 2)`
- `print('3 // 2 =', 3 // 2)`
- `print('3 / 2.0 =', 3 / 2.0)`
- `print('3 // 2.0 =', 3 // 2.0)`

- $3 / 2 = 1.5$

- $3 // 2 = 1$
- $3 / 2.0 = 1.5$
- $3 // 2.0 = 1.0$

# Python2 和 Python3 - Unicode

---

- Python 2中的字符串默认是某种编码类型的字符串，而不是Unicode。
- `print u'中国'`
- Python 3中的字符串默认是Unicode，而不是某种编码类型的字符串。
- `print('中国')`

# Python2 と Python3 – User Input

---

- Python 2

- `name = input('What's your name?') # alan`
- `print('Hello ', name)`
- `NameError: name 'alan' is not defined`

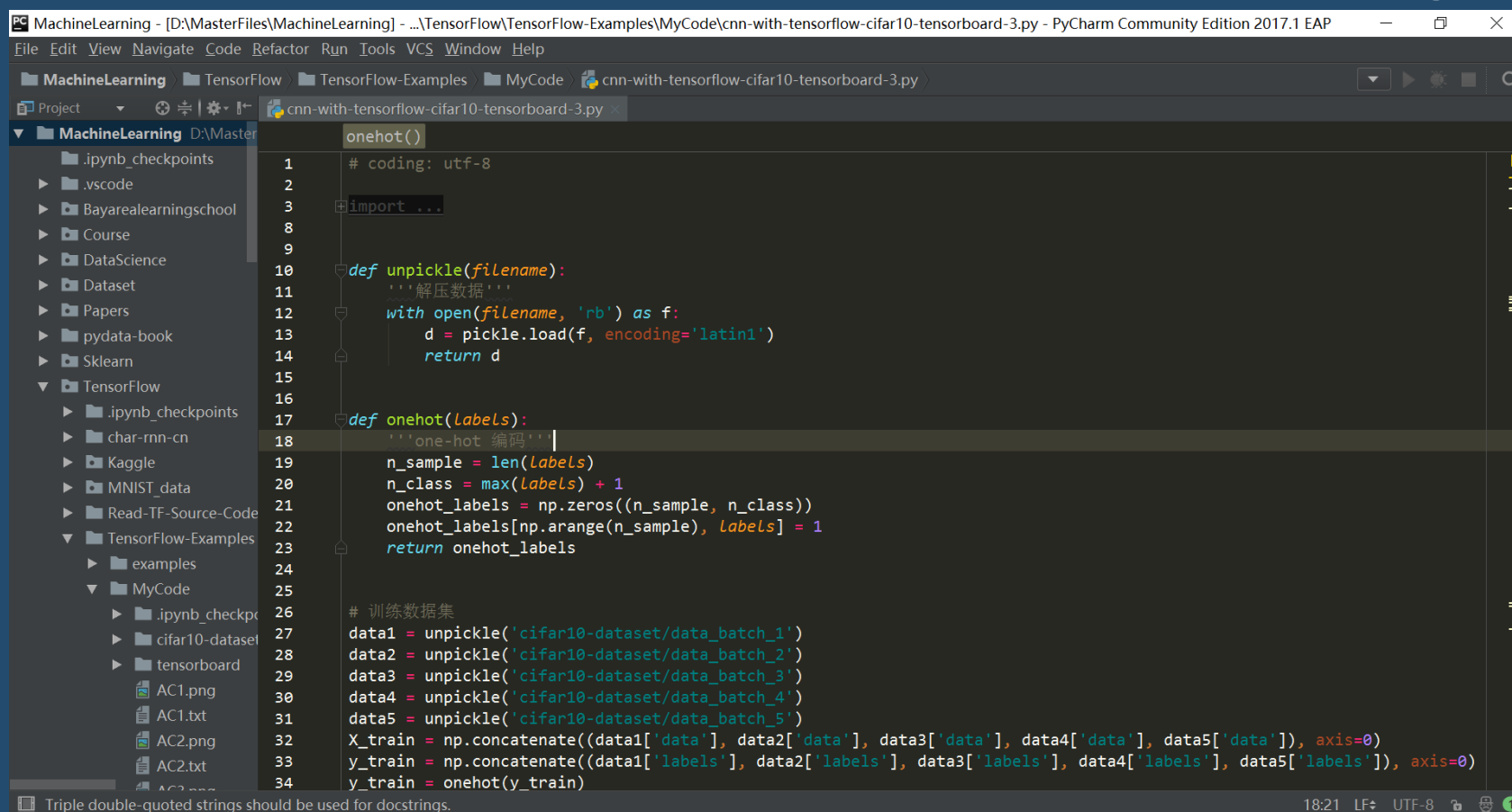
- Python 3

- `name = input('What's your name? ') # alan`
- `print('Hello', name)`
- `Hello ,alan`



# 环境配置 - Pycharm

- 链接: <https://pan.baidu.com/s/1nvuMhKI> 密码: 56dg



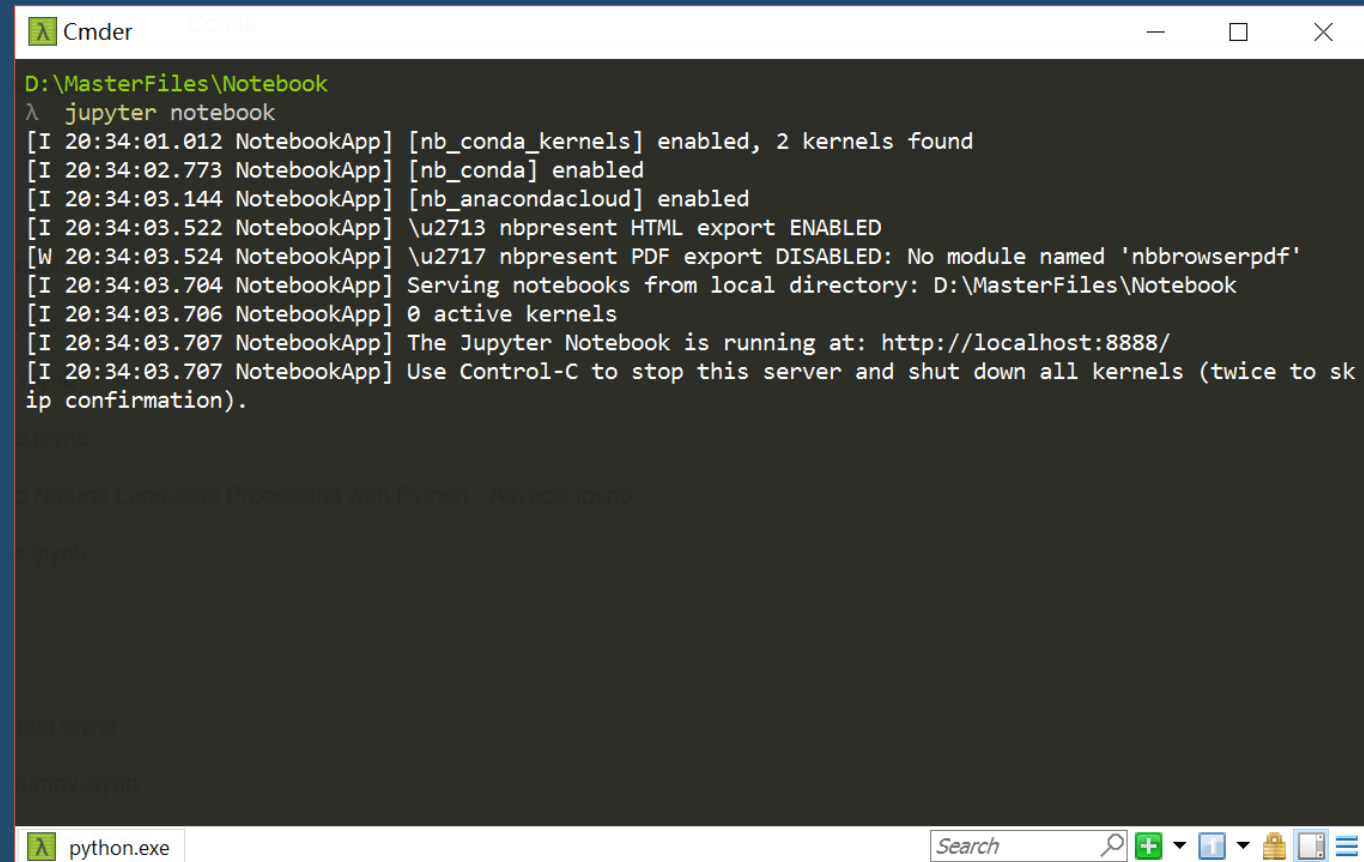
The screenshot shows the PyCharm IDE interface. The left sidebar displays a project tree for 'MachineLearning' with various subfolders like 'TensorFlow', 'TensorFlow-Examples', and 'MyCode'. The main editor window is open to the file 'cnn-with-tensorflow-cifar10-tensorboard-3.py'. The code is written in Python and includes comments in Chinese. It defines two functions: 'unpickle' for loading data from pickle files and 'onehot' for converting labels to one-hot vectors. The script also shows the loading of five data batches from the 'cifar10-dataset' folder and the concatenation of these batches into training data (X\_train) and labels (y\_train).

```
1 # coding: utf-8
2
3 import ...
4
5
6
7
8
9
10 def unpickle(filename):
11     '''解压数据'''
12     with open(filename, 'rb') as f:
13         d = pickle.load(f, encoding='latin1')
14         return d
15
16
17 def onehot(labels):
18     '''one-hot 编码'''
19     n_sample = len(labels)
20     n_class = max(labels) + 1
21     onehot_labels = np.zeros((n_sample, n_class))
22     onehot_labels[np.arange(n_sample), labels] = 1
23     return onehot_labels
24
25
26 # 训练数据集
27 data1 = unpickle('cifar10-dataset/data_batch_1')
28 data2 = unpickle('cifar10-dataset/data_batch_2')
29 data3 = unpickle('cifar10-dataset/data_batch_3')
30 data4 = unpickle('cifar10-dataset/data_batch_4')
31 data5 = unpickle('cifar10-dataset/data_batch_5')
32 X_train = np.concatenate((data1['data'], data2['data'], data3['data'], data4['data'], data5['data']), axis=0)
33 y_train = np.concatenate((data1['labels'], data2['labels'], data3['labels'], data4['labels'], data5['labels']), axis=0)
34 y_train = onehot(y_train)
```

# 环境配置 - Anaconda

---

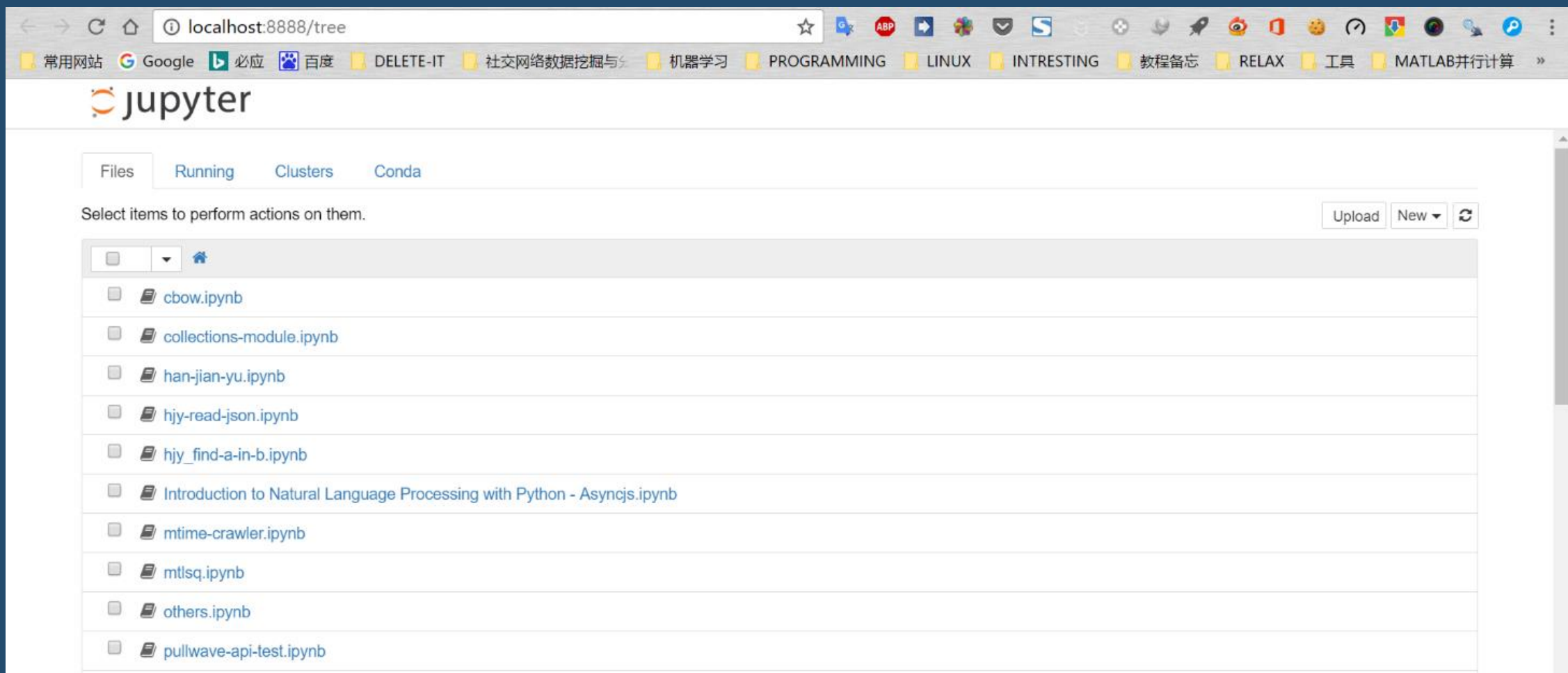
- Jupyter notebook



```
Cmdr
D:\MasterFiles\Notebook
λ jupyter notebook
[I 20:34:01.012 NotebookApp] [nb_conda_kernels] enabled, 2 kernels found
[I 20:34:02.773 NotebookApp] [nb_conda] enabled
[I 20:34:03.144 NotebookApp] [nb_anacondacloud] enabled
[I 20:34:03.522 NotebookApp] \u2713 nbpresent HTML export ENABLED
[W 20:34:03.524 NotebookApp] \u2717 nbpresent PDF export DISABLED: No module named 'nbbrowserpdf'
[I 20:34:03.704 NotebookApp] Serving notebooks from local directory: D:\MasterFiles\Notebook
[I 20:34:03.706 NotebookApp] 0 active kernels
[I 20:34:03.707 NotebookApp] The Jupyter Notebook is running at: http://localhost:8888/
[I 20:34:03.707 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
```

The screenshot shows a Windows Command Prompt window titled 'Cmdr' with a dark background. The current directory is 'D:\MasterFiles\Notebook'. The command 'jupyter notebook' has been executed, resulting in several status messages from the Jupyter Notebook application. These messages indicate that the application is running successfully on localhost:8888. The messages include information about enabled kernels, the local directory for serving notebooks, and instructions on how to stop the server. The taskbar at the bottom shows the active window is 'python.exe'.

# 环境配置 - Anaconda



# 基本语法

---

- 缩进
- 变量
- 函数
- 注释
- 模块和包
- 运行

# 基本语法 – 安装包

---

- 安装包可以使用 conda 或者 pip 命令安装，在命令行中输入以下命令之一即可：
- `conda install package_name`
- `pip install package_name`