

# 第一讲：Python语言环境部署及 相关设施准备

Python Environment & Relevant Preparation



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常用第三方库



## ➤ 联系方式

- 微信群、QQ群
- 小密圈
- 课程助教
- 电子邮件 : aqf\_group@163.com
- 课程作业 : 课程QQ群
- 微信公众号 : 量化研究所
- 微博

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## ➤ Anaconda安装

### ● 什么是Anaconda ?

- ✓ 一个关于Python和R的编程语言的免费增值的开源发行版。
- ✓ 安装Anaconda便同时安装了Python和必备或常用第三方库(150+)：  
Numpy、Pandas、scipy、matplotlib等关于科学计算和可视化等等库。

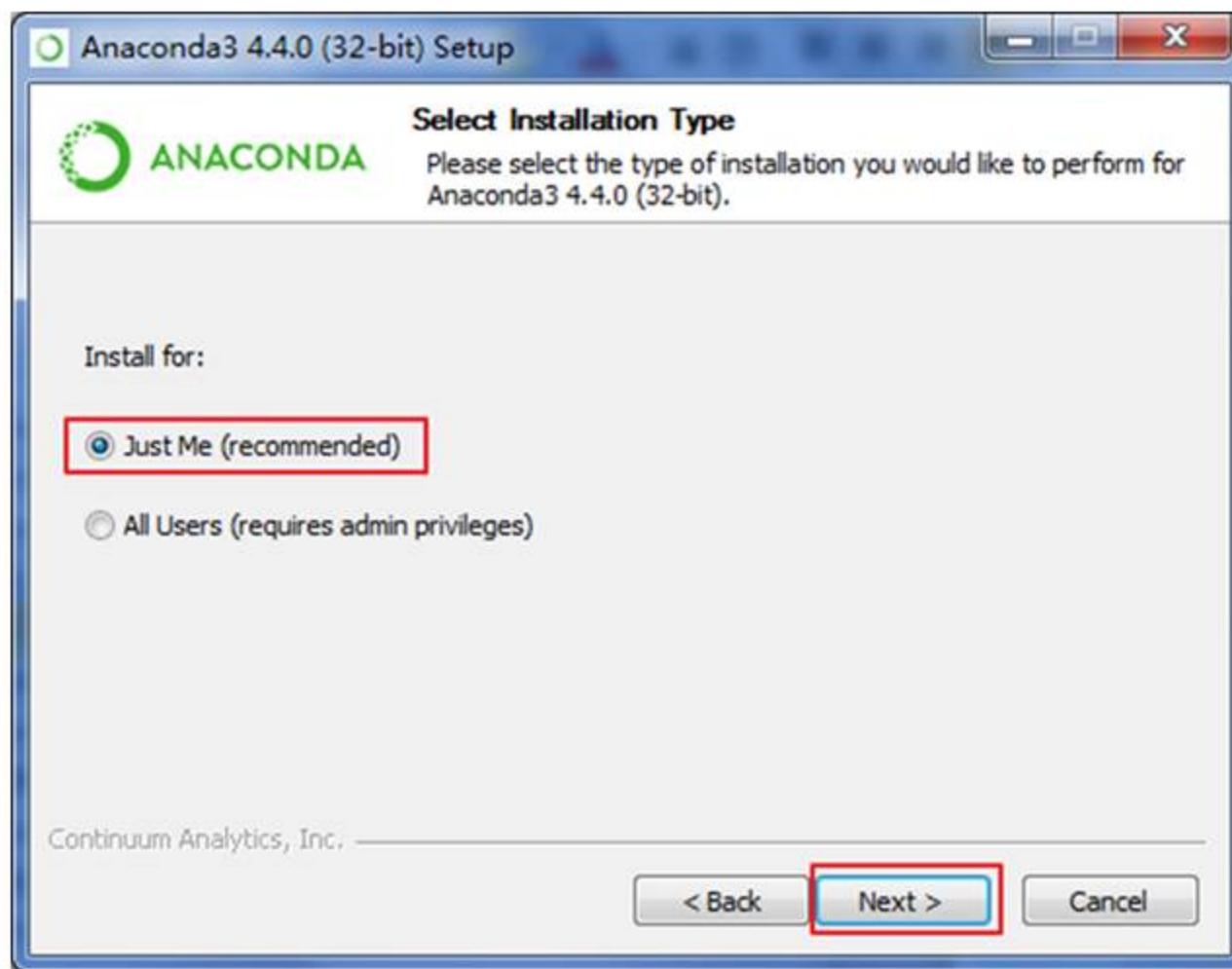
### ● 安装演示

- ✓ Anaconda官网：<https://www.continuum.io/downloads>
- ✓ 选择Python 2.x还是Python 3.x
  - ◆ Python 2.x is legacy, Python 3.x is the present and future of the language
  - ◆ Breaking backwards compatibility
  - ◆ Language style such as print() and range()
- ✓ 在本课程部分使用Python3.6



- Anaconda 安装过程中的几个注意点

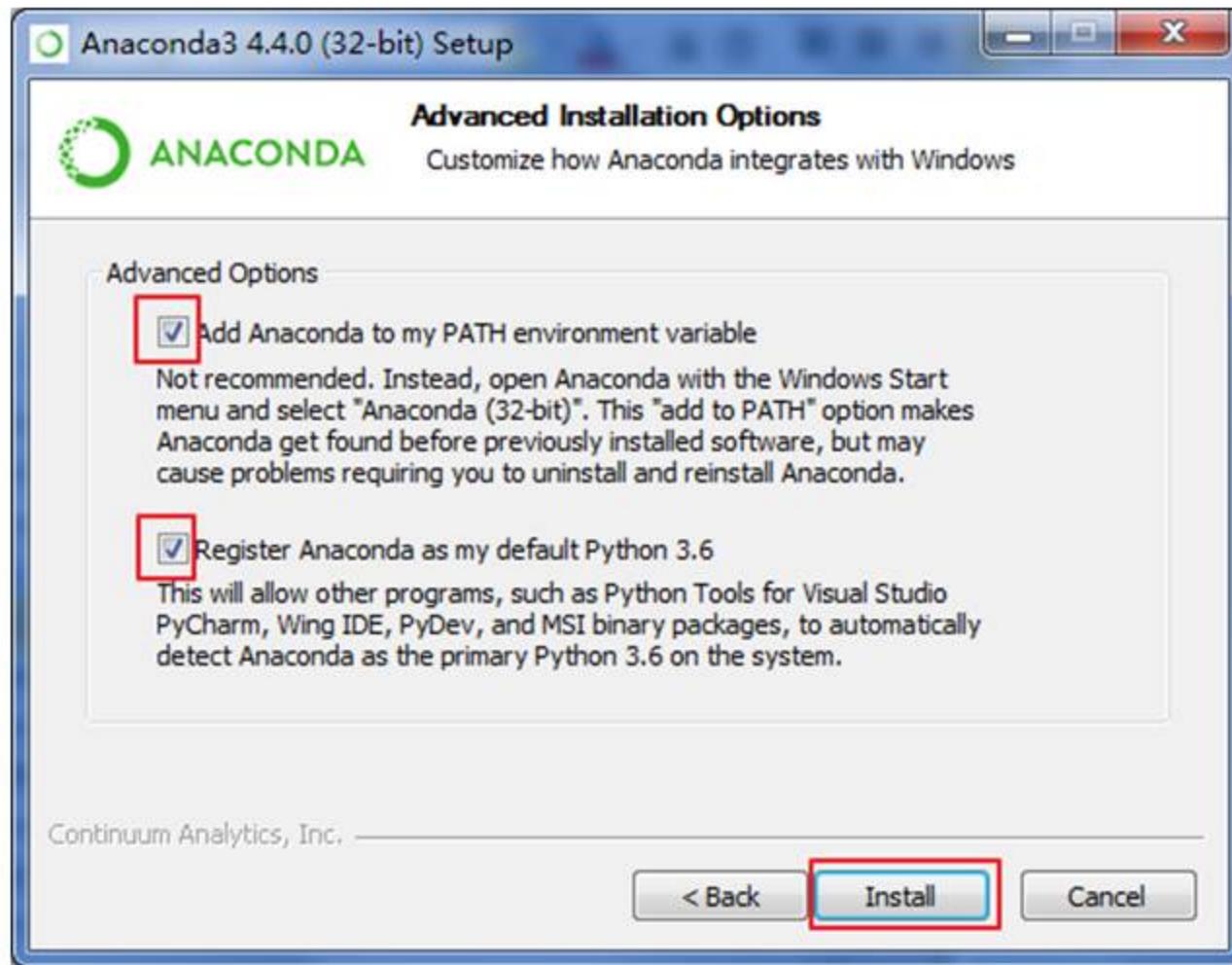
- ✓ Just Me





- Anaconda 安装过程中的几个注意点

- ✓ PATH environment variable





## ➤ Pycharm安装

### ● 什么是Pycharm ?

- ✓ Python编程语言的集成开发环境 ( IDE )

### ● 安装演示

- ✓ JetBrains官网 : <https://www.jetbrains.com/pycharm/>
- ✓ 选择免费版 : Community Version

The screenshot shows the 'Download PyCharm' section of the JetBrains website. It features the PyCharm logo (a green hexagon with a white 'PC' icon) and two download options: 'Professional' and 'Community'. The 'Professional' option is described as a 'Full-featured IDE for Python & Web development' with a 'DOWNLOAD' button and a 'Free trial' link. The 'Community' option is described as a 'Lightweight IDE for Python & Scientific development' with a 'DOWNLOAD' button and a 'Free, open-source' link. Navigation links for Windows, macOS, and Linux are also visible.

Version: 2017.1.4  
Build: 171.4694.38  
Released: June 15, 2017

System requirements  
Installation instructions

Windows macOS Linux

Professional

Full-featured IDE for Python & Web development

DOWNLOAD

Free trial

Community

Lightweight IDE for Python & Scientific development

DOWNLOAD

Free, open-source



## ● 初次使用Pycharm

- ✓ Create New Project
- ✓ Choose your location / file name & Interpreter
- ✓ 创建.py文件
- ✓ 点击 File→Settings →Project: demo → Project Interpreter查看调用的解释器

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## ➤ Anaconda的多环境管理

- 创立一个新环境

```
conda create -n py27 python=2.7
```

-n为—name缩写  
-e为—envs缩写

```
C:\Windows\system32\cmd.exe - conda create -n py27 python=2.7 anaconda
C:\Users\john>conda create -n py27 python=2.7 anaconda
Fetching package metadata .....
Solving package specifications: .

Package plan for installation in environment C:\Users\john\Anaconda3\envs\py27:

The following NEW packages will be INSTALLED:

_license:          1.1-py27_1
alabaster:         0.7.10-py27_0
anaconda:          4.4.0-np112py27_0
anaconda-client:   1.6.3-py27_0
anaconda-navigator: 1.6.2-py27_0
```



## ➤ Anaconda的多环境管理

- 查看所有环境和当前默认使用环境

conda info -e 或 conda info -envs

```
C:\Windows\system32\cmd.exe
C:\Users\john>conda info -e
# conda environments:
#
py27                  C:\Users\john\Anaconda3\envs\py27
* root                 C:\Users\john\Anaconda3
```

注：Root带\*的那一行表示当前默认使用的python环境

- 多环境下的切换

activate py27

deactivate py27



## ➤ Anaconda的多环境管理

### ● 虚拟环境的移除

```
conda remove -n py27-all
```

The screenshot shows a Windows command prompt window titled 'cmd C:\Windows\system32\cmd.exe'. The command entered is 'C:\Users\john>conda remove --name py27 --all'. The output shows the confirmation message 'Remove all packages in environment C:\Users\john\Anaconda3\envs\py27:' followed by 'Proceed <[y]/n>? y'. After the confirmation, the user runs 'C:\Users\john>conda info -e' to list environments, which shows a single environment named 'root' located at 'C:\Users\john\Anaconda3'.

```
C:\Windows\system32\cmd.exe
C:\Users\john>conda remove --name py27 --all
Remove all packages in environment C:\Users\john\Anaconda3\envs\py27:
Proceed <[y]/n>? y

C:\Users\john>conda info -e
# conda environments:
#
root                  *  C:\Users\john\Anaconda3
```



## ➤ Conda的基本用法

### ● 常用conda语句

✓ 查找指定库

```
conda search lib_name
```

✓ 安装指定库

```
conda install lib_name
```

✓ 安装很多库

```
conda install -y lib_name1 lib_name2 lib_name3
```

✓ 更新指定库

```
conda update lib_name
```

✓ 移除指定库

```
conda remove lib_name
```

✓ 查看库列表

```
conda list
```

✓ 更新conda本身

```
conda update conda
```



## ➤ Jupyter Notebook的基本用法

- Jupyter Notebook文件后缀：.pynb
- 使用“Win+R”快捷键召唤出运行窗口→输入cmd →enter确认
  - ✓ 打开桌面上的“金程教育量化投资课程”这个文件：键入“cd”→键入文件所在路径（需要打开的ipynb文件或本课程文件夹路径）enter确认→键入

```
C:\Users\john>cd C:\Users\john\Desktop\金程教育量化投资课程
```

```
C:\Users\john\Desktop\金程教育量化投资课程>jupyter notebook
```

- ✓ 打开指定盘的只需切换到盘。如打开E盘的该文件只需键入“e:”

**注意：**在使用notebook过程中不要关闭cmd窗口。

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## 常用第三方库



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NumPy

Base N-dimensional array package

matplotlib



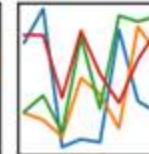
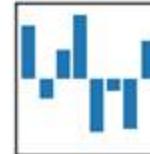
Comprehensive 2D Plotting



Machine Learning in Python

pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$



Data structures & analysis

Seaborn

attractive and informative statistical  
graphics

Tushare

一个免费、开源的python财经数据接  
口包



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# Thank you!

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