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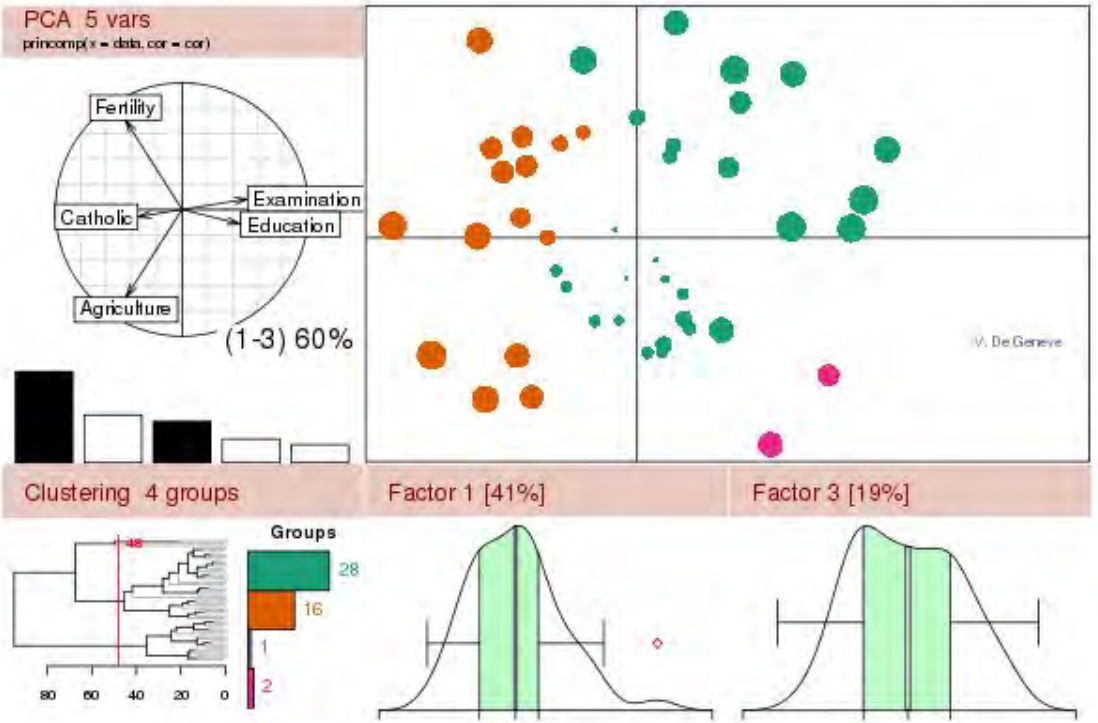
Connecting R with …

Fourth TorinoR user group meeting

The R Project for Statistical Computing



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Getting Started:

- R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To **download R**, please choose your preferred CRAN mirror.
- If you have questions about R like how to download and install the software, or what the license terms are, please read our answers to frequently asked questions before you send an email.

News:

- The R Foundation as been awarded fifteen slots for R projects in the Google Summer of Code 2011.
- **R version 2.13.0** has been released on 2011-04-13. The source code is first available in this directory, and eventually via all of

http://www.python.org

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Python 2 or 3?

Python Programming Language – Official Website

Python is a programming language that lets you work more quickly and integrate your systems more effectively. You can learn to use Python and see almost immediate gains in productivity and lower maintenance costs.

Python runs on Windows, Linux/Unix, Mac OS X, and has been ported to the Java and .NET virtual machines.

Python is free to use, even for commercial products, because of its OSI-approved open source license.

New to Python or choosing between Python 2 and Python 3? Read Python 2 or Python 3.

The Python Software Foundation holds the intellectual property rights behind Python, underwrites the PyCon conference, and funds many other projects in the Python community.

Read more, -or- download Python now

» **Python 3.3.0 released**
Python 3.3.0 has been released.
Published: Sat, 29 September 2012, 18:00 +0200

» **Third rc for Python 3.3.0 released**
The third release candidate for Python 3.3.0 has been released for testing.
Published: Mon, 24 Sep 2012, 08:00 +0200

» **Python Software Foundation announces Distinguished Service Award**
The Python Software Foundation announces the creation of the Distinguished Service Award,

Support the Python Community

Help the Python community by becoming an associate member or making a one-time donation.

Python 3 Poll

I wish there was Python 3 support in

(enter PyPI package name)

Vote Results

NASA uses Python...

... joining users such as Rackspace, Industrial Light and Magic, AstraZeneca, Honeywell, and many others.

http://ipython.org

IP[y]: IPython
Interactive Computing

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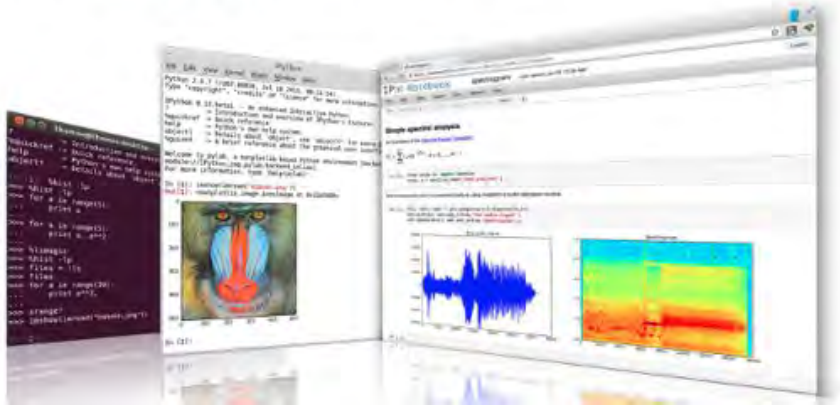
IPython provides a rich toolkit to help you make the most out of using Python, with:

- Powerful Python shells (terminal and Qt-based).
- A web-based notebook with the same core features but support for code, text, mathematical expressions, inline plots and other rich media.
- Support for interactive data visualization and use of GUI toolkits.
- Flexible, embeddable interpreters to load into your own projects.
- Easy to use, high performance tools for parallel computing.

To learn more about IPython, you can watch our *videos and screencasts*, download our talks and presentations, or read our extensive documentation. IPython is open source (BSD license), and is used by a range of other projects; add your project to that list if it uses IPython as a library, and please don't forget to *cite the project*.

IPython supports Python 2.6 to 2.7 and 3.1 or newer. Our older 0.10 series supports Python 2.5, and can be used with Python 2.4.



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John Hunter
1968–2012
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VERSIONS

Stable
0.13.1 – October 2012
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Development
pre-0.14
Github

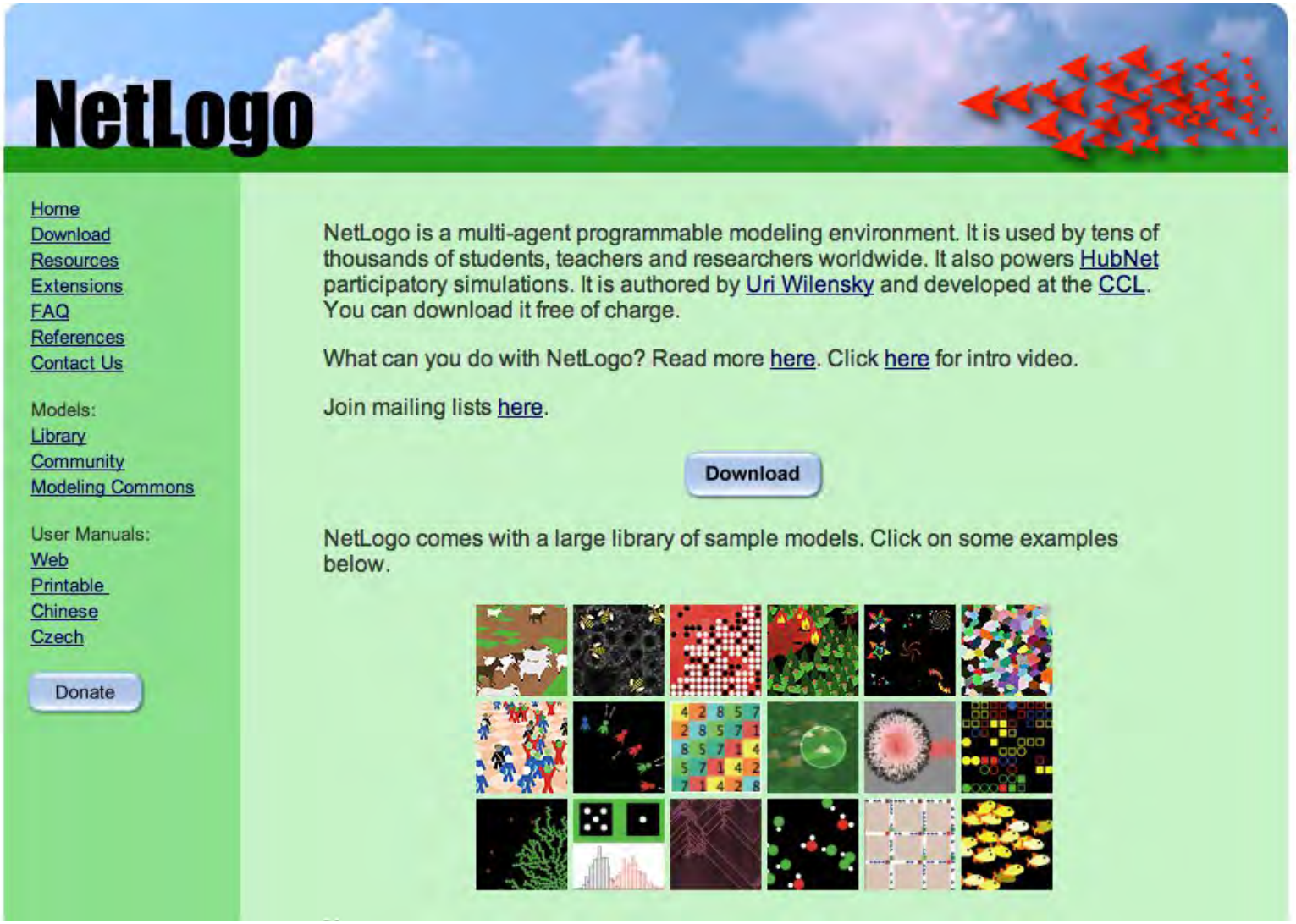
I USE IT +1

LINKS

Issue tracker
Mailing lists:
User · Dev
IRC channel
(Freenode, #ipython)
Try IPython online

MORE INFO

http://ccl.northwestern.edu/netlogo/



Road to install pyRserve and Rserve to connect Python and R (using Rserve tool)

Installing pyRserve for **Mac OSX** or for **Linux** (both for **Python 2.7**)

at http://packages.python.org/pyRserve/
look at Quick Installation

Make sure that Numpy is installed; to install it
from the terminal (see note1 and note2, next slide):

sudo easy_install Numpy

then

sudo easy_install pyRserve

(note1)

if easy_install does not exist in your Linux box, in Ubuntu-like distributions use

sudo apt-get install python-setuptools

in other distributions, use the preferred installation procedure

(note2)

if sudo easy_install pyRserve

does not work in your Linux box, follow the sequence:

download pyRserve-0.5.2.tar.gz
from http://pypi.python.org/pypi/pyRserve/#downloads
mount the file (which is a compressed archive) and then within the new created folderpyRserve-0.5.2 run
sudo python2.7 setup.py install

Installing pyRserve in Windows for Python 2.7

You need to have *python-setuptools* for Python 2.7 installed

from
http://pypi.python.org/pypi/setuptools#windows
download
setuptools-0.6c11.win32-py2.7.exe
and run it

then, in Command Prompt (the Windows program opening a black window)

cd \Python27\Scripts\

C:\Python27\Scripts>easy_install Numpy
C:\Python27\Scripts>easy_install pyRserve

Installing Rserve in Mac OSX, in Linux and in Windows (for Python 2.7 and other applications)

Rserve is at http://www.rforge.net/Rserve/

Within R

> install.packages("Rserve")

you will be asked for a CRAN server, chose into a list [i.e. *USA (WA 1) as Cran mirror*]

Maybe, your system will ask permission to create a folder; allow it.

Launching Rserve (any system)

always within R

>library(Rserve)
>Rserve()
>Rserve(args="--no-save") in Mac OSX

now you can quit R
>q()

in Windows, Rserve when executed,
can ask (only once) to reply to a f rewall screen of questions, reply yes to all the options

Interaction between Python and R

Interactive example in the IDLE shell

```
>>> import pyRserve
>>> conn = pyRserve.connect(host="localhost")
>>> conn
<Handle to Rserve on localhost:6311>
>>> conn.r("33+2")
35.0
>>> conn.close()
>>> conn
<Closed handle to Rserve on localhost:6311>
>>>
```

---

important, read

http://packages.python.org/pyRserve/manual.html

Interaction between Python and R

look at the example

h2_InteractingBuyersAndSellersRserveVersFor_Py2.7.py

In the Python repository of my Simulation models for Economics course, at

http://eco83.econ.unito.it/terna/simoec12/Python_examples/

Stopping Rserve (daemon), which waits for messages to be addressed to R

in Mac, use the Monitor (is in the Utility folder, in apps) and close the process Rserve-bin.so

in Linux (via terminal) find the Rserve-bin.so process number with
ps x
suppose that the process number is 111, finally use
kill 111

in Windows find the process Rserve with Alt+Ctrl+Del
go to Windows Task Manager
and then
in Processes
stop Rserve

ANYWAY you can have the Rserve process running in memory without any problem; its consumes an irrelevant quota of the CPU time.

Connecting IPython and R (using rpy2 via rmagic)

You need to install IPython (with **rpy2 [*]** for Python) and to have R (r-base in Linux) installed in your computer and … **r**magic … it works.

```
a=[1,2,3,4,3,2,5]
%load_ext rmagic

%%R -i a -o aa
aa=a*2
plot(a)
plot(aa)

aa
```

[*] http://rpy.sourceforge.net/rpy2.html

Scientif c advertising:

IPython examples at

http://nbipython.blogspot.com

Connecting NetLogo and R(using Rserve tool)

http://jasss.soc.surrey.ac.uk/15/3/8.html

From § 2.7, go to:

http://rserve-ext.sourceforge.net
http://sourceforge.net/projects/rserve-ext/f les/v0.1beta%20for%20NetLogo5%20and%20R2.12%20and%20higher/

You obtain the folder rserve, to be copied in the subfolder extensions\ of the NetLogo folder.

Rserve has to be activated in R as before (slide 10)

From rserve/examples try **example1**.nlogo, **package-example**.nlogo, **plot-example**.nlogo

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