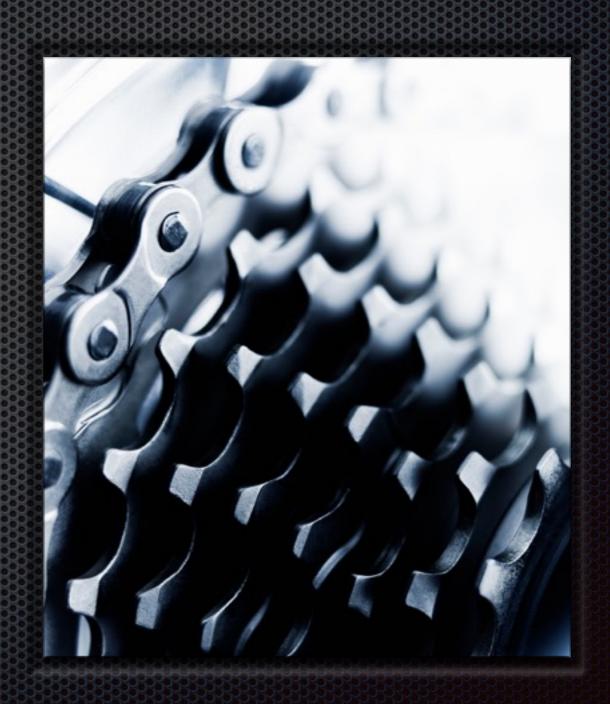# Introduction to IPython

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About Me

- Software Engineer at Doctor On Demand

- Working with Python since 2008

- Moved to Zürich in September

- Excited to be here

The Standard Shell

- It's better than nothing…

- Search history within your session

Installation

- pip install ipython

- That's it!

Getting Started

* Four most helpful commands

    * ?

    * %quickref

    * help

    * object? / object??

* Tab completion

    * Useful for being lazy and exploring libraries

* Persistent command history!

Configuration

- ipython profile create

  - Produces default config files

  - Stored in ~/.ipython/profile_default

  - Can keep separate config files and history for different tasks

Magic Functions

* Line magics = %

* Cell magics = %%

* Some of the most useful / interesting:

    * %run (-p), %edit, %save, %macro, %hist

    * %paste, %timeit, %reset

    * %pdb

    * %pushd, %popd, %dhist

* Full list: http://ipython.readthedocs.org/en/stable/interactive/magics.html

More magic functions

- %autocall

- %sc (or !)

- %sx (shell execute or !!)

- %who / %whos

- %pastebin

- %notebook

SciPy Magic

- %matplotlib

- %pylab [--no-import-all]

```
import numpy
import matplotlib
from matplotlib import pylab, mlab, pyplot
np = numpy
plt = pyplot

from IPython.display import display
from IPython.core.pylabtools import figsize, getfigs

from pylab import *
from numpy import *
```

Call Magics

- %%bash, %%html, %%javascript, %%latex, %%perl, %%pypy, %%ruby

  - Didn't know your python interpreter was a polyglot, did you?

- All shorthand for %%script <language>

  - E.g. %%bash is equivalent to %%script bash

- %%writefile

Pasting Code

Other Notes

* Interactive Demos:

    * http://ipython.readthedocs.org/en/stable/interactive/reference.html#interactive-demos-with-ipython

* IPython Extensions

    * https://github.com/ipython/ipython/wiki/Extensions-Index

Jupyter Notebook (Formerly IPython Notebook)

- Web application that allows you to share code, equations, annotations and visualizations

- Easy way to share work and have others reproduce

- Widely used in the scientific community

- Supports over 40 programming languages

- Notebook Gallery: http://nb.bianp.net/sort/views/