

Python Computing for Data Science

Files for Today:

<http://goo.gl/dyKHxx> = this PDF

<http://goo.gl/XFiZYI> = IPython Notebook

```
git clone https://github.com/profjsb/python-seminar.git
```

(if you dont have *git*, please set it up later)

Welcome to the ***Python Computing for Data Science*** Seminar

AY 250: Thursday 1-4pm (Hearst Field Annex B-1)

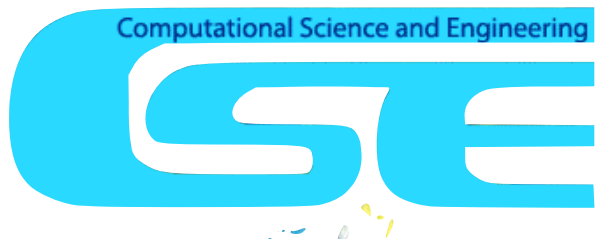
Instructor: Josh Bloom

GSI: Adam Morgan



Instructor+GSI email:
ucbpythonclass+seminar@gmail.com

Course email: python@bspace.berkeley.edu



Award #0941742

Motivation:

short version

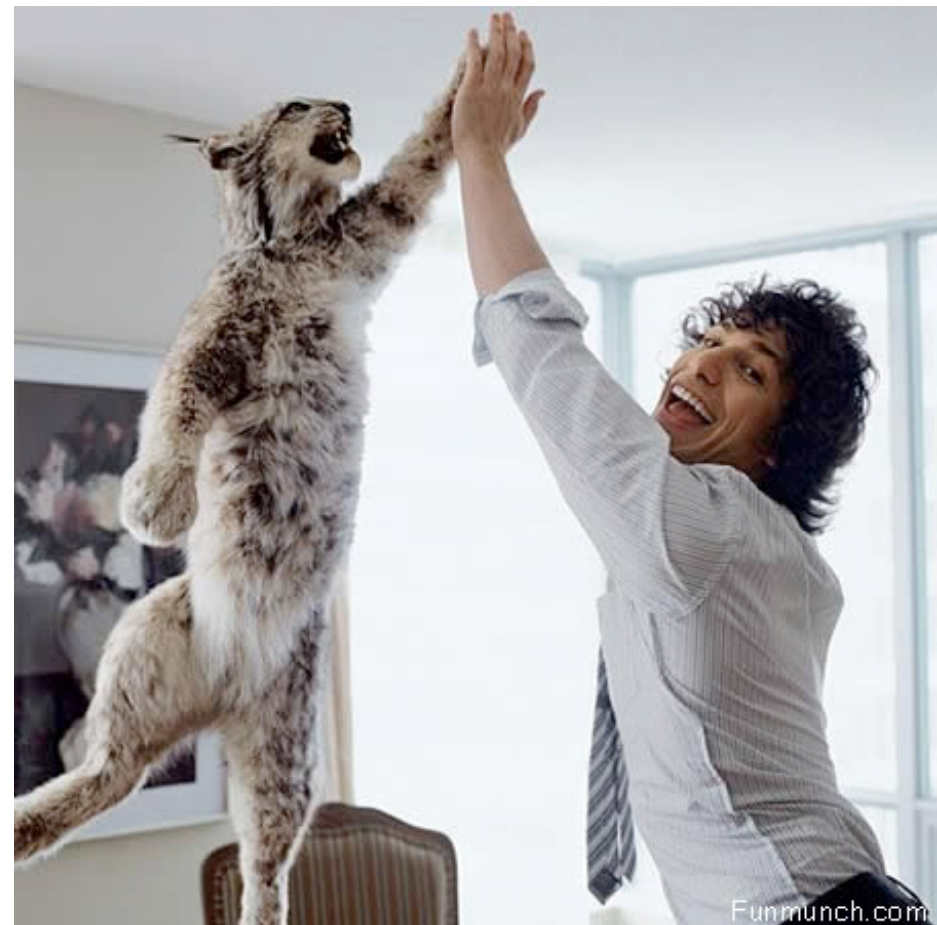
get you using Python to do cutting-edge research

long version

- 1) get you using Python to do cutting-edge research,
- 2) helping you realize that Python is a viable framework to do just about any 21st century problem well (and costs zero). “Super Glue”
- 3) fold you into the Python community so it benefits from having you part of it

How we plan to do this:

- "formal" lectures on specialized topics each week by leading experts & local practitioners (Thursday)
- "breakout work sessions" interspersed within the lectures
- homework assignments based on week's lecture
- final project





MONTY PYTHON

For awkward, forced laughter.

Bring me

a shrubbery!!

**I DON'T ALWAYS USE MEMES
WHEN I TEACH PYTHON**

**BUT WHEN I DO:
IMPORT
AWESOMENESS**



piazza for real-time/off-line interaction

homework updates, solutions, ...

<http://piazza.com/berkeley/fall2013/ay250>

The screenshot shows the Piazza web interface for course AY 250. The top navigation bar includes the Piazza logo, course name 'AY 250', and links for 'Q & A', 'Course Page', and 'Manage Class'. A user profile for 'Joshua Bloom' is visible on the right. Below the navigation bar, a sidebar on the left contains a list of pinned posts: 'Cloning the Git Repo for the ...', 'Getting up and running with ...', and 'First Day of Class Tomorrow'. The main content area displays a note titled 'Cloning the Git Repo for the Class' by Joshua Bloom. The note includes instructions on how to clone a Git repository and pull updates. The note has 2 views and was posted 1 minute ago. Below the note, there is a section for 'followup discussions'.

piazza AY 250 Q & A Course Page Manage Class Joshua Bloom

hw1 hw2 hw3 hw4 logistics

Unread Updated Unresolved Following

New Post Search or add a post...

PINNED

- Instr Cloning the Git Repo for the ...
- Instr Getting up and running with ...
- Instr First Day of Class Tomorrow

TODAY

Welcome to Piazza!

Note History:

note ☆ stop following 2 views

Cloning the Git Repo for the Class

You should do this once (it will take awhile) while on a good network:

```
git clone https://github.com/profjsb/python-seminar.git
```

Then, at the start of each class:

```
git pull
```

(If you don't have git, see the [bottom of this link](#)).

Josh

logistics

edit good note 0 1 minute ago by Joshua Bloom

followup discussions for lingering questions and comments

Start a new followup discussion

github is the main data portal for us...

PUBLIC

profjsb / python-seminar

Pull Request Unwatch Star 1 Fork 0

Code Network Pull Requests 0 Issues 0 Wiki Graphs Admin

Python Seminar Course at UC Berkeley (AY 250) — [Read more](#)

Clone in Mac ZIP HTTP SSH Git Read-Only git@github.com:profjsb/python-seminar.git Read+Write access

branch: master Files Commits Branches 2 Tags Downloads

Latest commit to the master branch

setting up basic structure

profjsb authored 6 minutes ago commit ad44019458

python-seminar /

name	age	message	history
Breakouts	6 minutes ago	setting up basic structure [profjsb]	
DataFiles_and_Notebooks	6 minutes ago	setting up basic structure [profjsb]	
Lectures	6 minutes ago	setting up basic structure [profjsb]	
LICENSE	6 minutes ago	setting up basic structure [profjsb]	
README.md	4 days ago	fixed classroom number [profjsb]	

Scientific Research Computing with Python

Files for Today:

<http://goo.gl/dyKHxx>

= this PDF

<http://goo.gl/XFiZYI>

= IPython Notebook

/DataFiles_and_Notebooks/00_AdvancedPythonConcepts

= follow-along files

<http://profjsb.github.io/python-seminar/>

View on GitHub



Python Computing for Data Science

Undergraduate/Graduate Seminar Course at UC Berkeley
(AY 250)



tar.gz

.zip



+10 Recommend this on Google

Hearst Field Annex B-1: Thursday 1 – 4 PM FALL 2013 (CCN #060800)

Synopsis

Python is becoming the *de facto* **superglue language for modern scientific computing**. In this course we will learn Pythonic interactions with databases, imaging processing, advanced statistical and numerical packages, web frameworks, machine-learning and parallelism. Each

Course Schedule

Date	Content	Leader
Aug 29	Advanced Python Language Concepts (geared towards Boot Camp graduates)	Josh
Sep 5	scipy, numpy	Fernando
Sep 12	Advanced versioning, application building (optparse), debugging & testing	Josh
Sep 19	Advanced plotting, Notebooks and data vizualization, mayavi	Fernando
Sep 26	Machine Learning	Josh
Oct 3	Interacting with the world (xml-rpc, urllib, sending and receiving email, serial)	Josh
Oct 10	Database interaction, large datasets (HDF5)	Josh
Oct 17	Pandas and Timeseries Modelling	<i>Wes McKinney</i>
Oct 24	GUI (Tkinter, GTK, Traits)	Josh
Oct 31	Parallelism	Paul/Fernando
Nov 7	Web frameworks & RESTful APIs, Flask	Josh
Nov 14	Bayesian programming & Symbolic math	<i>Joey Richards</i>
Nov 21	Cython; wrapper around legacy code -- FORTRAN, C, etc	Paul
Nov 28	holiday	
Dec 5/Onward	final project work	

Workflow for a *typical* week

Wednesday:

email from week's instructor w/ special installation instructions, reading/tutorials

Thursday:

1:00 `cd python-seminar; git pull`

1:10 - 2pm: Intro topics Lecture

2 - 2:30pm: Breakout coding

2:30 - 3:30pm: Detailed topics lecture

3:30-4: Work on homework

Monday:

10am - 12: Supervised help with homework
481 Evans (Time Series Center)

Wednesday:

Homework project due

Course Grade

10% participation in lectures/breakouts

60% Homeworks

there will be 11 assignments & we will drop your lowest score

30% Final Project, due Dec 11
(no final exam)

Final Project

a) Build a substantial framework for doing something in your own research, based on at least two topics from different weeks. Something you will use for a long time...

e.g., image analysis package, hardware control software, a webservice that does some crunching under the hood, provide a parallelization of some algorithm or code you use, etc.

- or -

b) Contribute code/functionality to a major open-source Python project (IPython, scipy, Cython, numpy, matplotlib, etc.)

Prerequisites:

- working knowledge (or more) of the core Python language
 - and/or -

Python BootCamp graduate

- installation of Python (2.7.3 - 2.7.5), scientific 3rd party packages (Anaconda distro), & git
- laptop for use in class and for homeworks
- tolerance for our terrible computer humor

<http://www.pythonbootcamp.info/preparation/software>