Python for Data Science Aug 2019

Saturday, August 3, 2019 07:54

Duration: 12 weeks / 4 hours per week

#	Schedule	Topic	Book	Website	Demo	Implementation
1	Aug 03	- Philosophy - What to expect / demand - Course outline & schedule - GIT - Jupyter Notebooks - Python: • Objects and their properties • Functions and modules • Scalers • Sequences - Where to look for more information - Notebooks • data model I • utils.py • data model II - Homework 1: Roll your own utils.py	Pro Git, Scott Chacon and Ben Straub (https://git-scm.com/book/en/v2)	Python 3 Documentation	Face recognition	
2	Aug 04	- Python: • Sequences • Understanding parameter passing • Lists v. tuples, and the operations on lists • Iterating over lists & tuples • Ranges, using ranges - Mo' GIT - Notebooks: • data model II • utils.py • type hierarchy • parameters to functions - Homework 2: Configure your GitHub account (with ssh access). Create a repository and add your notebooks to it	The Art of Computer Programming, D. E. Knuth	What the f*ck Python!	Matrix-vector multiplication (animated)	
3	Aug 11	- Jupyter, iPython, PyCharm, … - Python • Slices as views • Ternary expressions • List comprehensions • Ranges • Random numbers - Applications • Fibonacci • Sieve - Notebooks: • ranges • Ternary expr and comprehensions - Jupyter notebook • Documentation • LaTeX - Homework: • Five ways to Fibonacci!! • Runtime measurement & optimization	The Visual Display of Quantitative Information, Edward Tufte	Top500 Supercomputers	Moonshift	- Fibonacci - Sieve of Eratosthenes
5	Aug 18	- Python • Pretty printing, formats • Random number generation • Generators • Decorators (?) - Python: Bisection - Homework: • Solve the exercise functions using the Bisection method Bisection: • Run bisection for other methods • Calculate the number of iterations • Optimize your code! Random numbers: Calculate pi using • Area of circle/square • Buffon's needle Taylor series • Calculate sin, cos • Write testing routine • Optimize	Programming Pearls, Jon Bentley	Latency Numbers Every Programmer should know	sig.c	- Bisection Method - Taylor Series