

Python and Data Science (Live Coding)

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Why Data Science?

Well because of the data and because of the science

- Data science means different things to different people
 - Data engineering → data vis → predictive modeling
- Statistics, machine-learning, databases, web-development
- We are in an era of unprecedented data growth
 - And so few know how to effectively use data to gain insight
- Science is the proponent of truth—arguably the foundation of society

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There are jobs as well!

The essential data science toolkit

Subject area mastery

- SQL and noSQL databases
- Associative statistics and hypothesis testing
- Unsupervised and supervised learning
- Data visualization
- Data products

Programming mastery

Expert level proficiency in language that is useful for data science

Why Python?

- There are many languages of data science (Python, R,...)
- Ecosystem (NumPy, matplotlib, pandas)
- Readability, Flexibility
- Glue language
- Object-oriented and functional

Demo 1

Tutorial Example

Demo 2

Advanced Example

Overview

- 1 Version control based workflow
- 2 Jupyter notebook
- 3 Data types (lists, arrays, data frames)
- 4 EDA - working with data frames, plotting
- 5 Working with text (latent topics, clustering)
- 6 Data visualization

Week	Topic
0	Python workshop
1	Programming and SQL
2	Probability and Statistics
3	Linear Models
4	Supervised Learning
5	NLP, Business analytics
6	Unsupervised Learning
7	Break Week
8	Big Data / Data Engineering
9	Special Topics / Case Studies
9	Project
10	Project
11	Project
12	Career services and Special topics

There are also part-time courses and free meet-ups...