

Data Science for Finance Boot Camp Course Curriculum

DAY 1

Morning Session (09:30 – 13:00)

Introduction to Data Science for Finance

- Topics include: what is data science and why is it essential for finance professionals to understand key data science concepts?

Computer Science 101

- Topics include: what is a computer program, what is in your computer (including memory), what do we mean by a “programming language”, does the computer understand Python, how does the computer execute a program

Hands-on Introduction to Python Programming

- Topics include: why use Python for data science, how do we write programs in Python, syntax, variables, conditionals & control flow, data structures, loops, functions, modules, objects & classes

Lunch (13:00 – 14:00)

Afternoon Session (14:00 – 17:00)

Linear Regression in Finance

- Topics include: what is regression, what questions can regression help us answer, what are the different types of regression, how do we use Python to solve regression tasks, how do we visualize our results, how can we assess the quality of our results, what is overfitting & how can we avoid it

DAY 2

Morning Session (09:30 – 13:00)

Data Science Methods in Finance

- Topics include: how are artificial intelligence (AI), machine learning, & data science similar/different, what is data mining, overview of data science methods, data science problem solving process, differences between supervised and unsupervised tasks

Classification in Finance

- Topics include: intuition behind Bayes' Theorem, classification using Naïve Bayes, techniques (i.e., accuracy, confusion matrix, and receiver operating characteristic) to evaluate classification performance, selecting informative attributes (i.e., information gain and entropy)

Lunch (13:00 – 14:00)

Afternoon Session (14:00 – 17:00)

Clustering in Finance

- Topics include: unsupervised modeling, when to use clustering, what is similarity and how do we measure it, intuition behind k-means, how to implement k-means clustering in Python, how to improve your clustering model, using similarity for predictive modeling (classification)

The Importance of Big Data in Finance

- Topics include: what is Big Data, how does Big Data relate to the concepts taught in this course, overview of most common Big Data technologies, how can finance companies capture the full potential of Big Data

Review of Day 1 and 2

SEMINAR VIDEOS, PICTURES, AND REPORT CARDS -

<https://drive.google.com/folderview?id=0B01PMw1l8uj2aEhLTzU3X0RzVjA&usp=sharing>