



Data and Statistics Foundation for Investment Professionals

The goal of this course is to offer an introduction to the basic data and statistical techniques that underpin data analysis and lay an essential foundation in the techniques that are used in big data and machine learning. It introduces the topics and gives practical examples of how they are used by investment professionals, including the importance of presenting the "data story" by using appropriate visualizations and report writing.

Format

Self-paced online

Level

Beginner

Length to Complete

12–15 hours

Price

\$339 non-member

\$309 member

Recognition Format

Certificate of completion and badge
Course primarily aimed at individuals.

PL/SER Credits

10 PL (no SER)

Learning Outcomes

- Explain basic statistical measures and their application to real-life data sets
- Calculate and interpret measures of dispersion and explain deviations from a normal distribution
- Compare and contrast ways of visualizing data and create them using Python (no prior knowledge of Python necessary)
- Explain sampling theory and draw inferences about population parameters from sample statistics
- Formulate hypotheses on investment problems

Session Topics

Module 1: Measures of Central Tendency

Module 2: Measures of Dispersion

Module 3: Introduction to Distributions

Module 4: Data Visualization Techniques

Module 5: Sampling Theory

Module 6: Hypothesis Testing

Module 7: Final Project

Participant Profile

This course is designed for investment and finance practitioners, or those aspiring to the field, who are looking for an introduction to the basic data and statistical techniques that underpin data analysis and create the essential foundation for the methods that are used in big data and machine learning. This course is considered the first in the Data Science for Investment Professionals collection.



Statistics for Machine Learning for Investment Professionals

The goal of this course is to offer an introduction to foundational statistical concepts underpinning machine learning as well as advanced AI techniques used in the investment profession. Demonstrating core modelling frameworks along with carefully selected real-world investment practice examples, the course aims to familiarize learners with two important programming languages – Python and R (no prior knowledge of Python or R necessary). The motivation is to demonstrate the elegance – and speed – simple programming brings to the investment decision-making process.

Format

Self-paced online

Level

Beginner

Length to Complete

12–15 hours

Price

\$339 non-member

\$309 member

Recognition Format

Certificate of completion and badge
Course primarily aimed at individuals.

PL/SER Credits

10 PL (no SER)

Learning Outcomes

- Describe the importance of identifying information patterns for building models
- Explain probability concepts for solving investing problems
- Explain the use of linear regression and interpret related Python and R code
- Describe gradient descent, explain logistic regression, and interpret Python and R code
- Describe the characteristics and uses of time-series models

Session Topics

Module 1: Data and Patterns

Module 2: Randomness and Probability

Module 3: Linear Regression

Module 4: Introduction to Advanced Regression Concepts

Module 5: Introduction to Time-Series Analysis

Participant Profile

This course is designed for investment and finance practitioners, or those aspiring to the field, who want to learn the foundational statistical concepts underpinning machine learning as well as advanced AI techniques. It is recommended that learners complete the Data and Statistics Foundation for Investment Professionals course before taking this course.



Machine Learning for Investment Professionals

The goal of this course is to offer a basic, practical understanding of machine learning techniques and how they are used in the investment process. Incorporating real-life case studies, this course covers both the technical and the "soft skills" necessary for investment professionals to stay relevant. This course is uniquely tailored to the needs of investment professionals or those with investment industry knowledge.

Format

Self-paced online

Level

Beginner

Length to Complete

12–15 hours

Price

\$339 non-member

\$309 member

Recognition Format

Certificate of completion and badge
Course primarily aimed at individuals.

PL/SER Credits

10 PL (no SER)

Learning Outcomes

- Describe how machine learning applications can address real-world investment problems
- Utilize the language of data science when working with data scientists and data engineers
- Explain machine learning concepts and techniques to a non-expert audience
- Apply the CFA Institute Ethical Decision-Making Framework to machine learning dilemmas

Session Topics

Module 1: Machine Learning

Module 2: Supervised Learning

Module 3: Unsupervised Learning

Module 4: Deep Learning

Module 5: The Translator

Module 6: Final Project

Participant Profile

This course is designed for investment and finance practitioners, or those aspiring to the field, who want to develop a basic, practical understanding of machine learning techniques and how they are used in the investment process. It is recommended that learners complete the Data and Statistics Foundation and the Statistics for Machine Learning for Investment Professionals courses before taking this course.



Natural Language Processing for Investment Professionals

The goal of this course is to provide a conceptual introduction to natural language processing, its key techniques and terminology, and to teach learners to interact effectively with data science experts in applying natural language processing to their investment decision making. Investment practitioners can then articulate their investment problems to the data science team, use their domain knowledge to effectively source suitable model inputs, and finally interpret model results into appropriate investment actions.

Format

Self-paced online

Level

Beginner

Length to Complete

12–15 hours

Price

\$339 non-member

\$309 member

Recognition Format

Certificate of completion and badge
Course primarily aimed at individuals.

PL/SER Credits

10 PL (no SER)

Learning Outcomes

- Describe cleaning and wrangling of text data to make it structured
- Explain data exploration, including exploratory data analysis, feature selection and feature engineering, using text data
- Explain training, evaluating, and tuning natural language processing–based classification models
- Evaluate the performance of such models
- Explain types of applications of natural language processing in investments

Session Topics

- Module 1: Cleaning and Wrangling Text Data
- Module 2: Exploratory Data Analysis, Feature Selection, and Feature Engineering with Text Data
- Module 3: Selecting, Training, Evaluating, and Tuning a Natural Language Processing Model
- Module 4: Developing a Natural Language Processing Model for Predicting Sentiment of Financial Text
- Module 5: Applications of Natural Language Processing in Investment

Participant Profile

This course is designed for investment and finance practitioners, or those aspiring to the field, who want to understand natural language processing and its key concepts, techniques, and applications in investment decision making. It is especially suited for the translator role, which is those individuals working with and communicating between both investment and data science teams.