KOENIG
step forward

KOENIG SOLUTIONS · COURSE OUTLINE

Time Series in Python: Stationarity & Forecasting

Learn to analyse and forecast time series data in Python, from stationarity testing to volatility and model selection.

3 Days
24 HOURS

15
TOPICS

COURSE OVERVIEW

This course covers the distinction between time series and cross-sectional data, along with the assumptions underlying time series analysis and how to transform a data set into a time series. It introduces Python for statistical analysis, including working with related series such as prices and returns, normalising data, and special series like White Noise and Random Walks. It then addresses autocorrelation, moving averages for unexpected shocks, model selection and residuals, stationarity testing, integration, and volatility. The course concludes with forecasting future values based on patterns observed in past data.

WHO THIS COURSE IS FOR

Data Analysts | **Data Scientists** | **Python Developers** | **Financial Analysts** | **Statisticians** | **Forecasting Analysts**

LEARNING OBJECTIVES

- Differentiate between time series data and cross-sectional data
- Explain the fundamental assumptions of time series data
- Transform a data set into a time series
- Apply Python for statistical analysis of time series
- Compare related series such as prices and returns
- Explain autocorrelation and methods to account for it
- Interpret stationarity and how to test for it
- Forecast future values based on observed past patterns

COURSE SYLLABUS

15 Topics

TOPICS

- Differentiate between time series data and cross-sectional data
- Understand the fundamental assumptions of time series data and how to take advantage of them
- Transforming a data set into a time-series
- Start coding in Python and learn how to use it for statistical analysis
- Carry out time-series analysis in Python and interpreting the results, based on the data in question
- Examine the crucial differences between related series like prices and returns
- Comprehend the need to normalize data when comparing different time series
- Encounter special types of time series like White Noise and Random Walks
- Learn about “autocorrelation” and how to account for it
- Learn about accounting for “unexpected shocks” via moving averages
- Discuss model selection in time series and the role residuals play in it
- Comprehend stationarity and how to test for its existence
- Acknowledge the notion of integration and understand when, why and how to properly use it
- Realize the importance of volatility and how we can measure it
- Forecast the future based on patterns observed in the past

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

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