Time Series and Forecasting with R Training

Duration: **3 Day**

BILGINÇ IT Academy
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Overview

This three-day course is aimed at those who are familiar with data analysis and are interested in learning about how to analyse, model, and yield value from time series assets.

This course will be of interest if you are interested in developing your own skills to move from analytics to Data Science, or if you are working with Data Scientists and want to learn more about what is possible when working with time series data.

You will be introduced to key concepts and tools for use in time series analysis and forecasting including time series characteristics, time series components, time-based statistics, model development, exploratory analysis and visualisation, as well as techniques and strategies for model deployment.

Throughout the course you will engage in activities and discussions with one of our Data Science technical specialists. Theoretical modules are complimented with comprehensive practical labs.

Prerequisites

- Intermediate knowledge of R programming, including variables, types, use of functions etc.
- Understanding of linear regression models and model equations.

Target Audience

Members of the audience are required to have a some technical expertise such as table structure, working with tabular data in R, and simple data analysis.

They may be Mid/Senior Leadership seeking a greater understanding of how to utilise time series assets within their organization.

They may come from other technical backgrounds such as Data Analysts, Software Developers, and Data Engineers who either work with Data Scientists or are using this course in their journey towards training as a Data Scientist.

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What You Will Learn

- Interpret time series visualisations and understanding the business need for forecasts
- Identify decomposition components: trend, seasonality, noise
- Identify methods for handling shocks
- Calculate a moving average
- Identify how regression methods can be applied in simple forecasts
- Use R to forecast with Arima methods
- Apply the ARIMA model development and testing process
- Tune and assess forecasting models
- Use Facebook Prophet
- Build and evaluate a model using prophet
- Understand deep learning approaches for time series modelling
- Interpret a deep learning time series model
- Evaluate a deep learning time series model
- Work on a practical time series modelling problem.

Outline

Day 1

- Welcome and course administration
- Introduction to Time Series Forecasting
- Introduction to Forecasting with ARIMA

Day 2

- Time Series Modelling with Prophet
- Time Series Modelling with Deep Learning

Day 3

- Time Series Modelling Activity