

**Title**

Simple to Advanced Forecasting Methods - Application to Industry Problems

**Abstract**

This tutorial will build-up in a step by step process how to model times-series data starting from a simple trendline to advanced machine learning approaches incorporating a variety of exogenous variables. Also various concepts related to forecasting such as top-down/bottom-up approaches and how to measure the accuracy of a forecast will be covered. An example from the industry where we applied advanced forecasting technique for a leading retails company will be shared. Finally a hands-on tutorial will be carried out with the audience to apply to some toy examples.

**Description and outline**

- Time-series Component
  - Trend
  - Seasonality
  - Auto-Regression
  - External Variables
  - Noise
- Other Concepts
  - Top-Down/Bottom Up
  - Measures of Accuracy
  - Pre-processing
- Techniques
  - ARIMA, ARIMAX, VARMAX
  - Holts Winters
  - Prophet
  - Linear regression
  - Gradient Descent
  - Deep Learning
- Industry example
- Walk-through tutorial

**Goals**

The aim of the tutorial is make it easy to understand and apply time-series forecasting. This is a very important area with relevance in a multitude of domains. A fraction of accuracy gain would translate to immense increases in revenue for a company or to prevent huge losses. The audience will understand the components of a time-series in order to better interpret and model them.

**Target Audience**

Business as well as technical audience is welcomed

**Requirements**

Projector/LCD

**Presenter**

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I work as a senior data science consultant at Teradata. My main roles are to support pre-sales of data science project locally and globally. I am also involved as a principal in supervising various analytics project.

My area of expertise are speech and text processing with an MPhil, PhD and Post-doc from University of Cambridge, Sussex and Sheffield, respectively, in the UK.