

## The Data-Shack workshop: W5. Data Science (3 days)

Convert data to insights

### Prerequisite

Intermediate analytics (2 days)

### Objectives

Introducing delegates to:

- the objectives and benefits of data science
- methods related to unsupervised learning, where dependent variables are not known/used
- methods related to supervised learning, where the dependent variables are known

### Description

This three-day workshop opens the incredibly rich world of data science. Too often, we have huge data resources but make little use of that data. Data science enables one to tap into this wealth of data and derive useful, actionable insights that can be used to drive decision making in your business.

### Outcome

Delegates will leave the workshop with an excellent understanding of Big Data & Data Science Techniques and how they are applied across operational environments to solve complex problems with large data sets.

### Topics\*

1. Introduction to data science
  - 1.1. What is data analysis and data science?
  - 1.2. Asking the right questions from data
  - 1.3. How are analytics and data science used?
  - 1.4. Case studies
2. Unsupervised learning
  - 2.1. Cluster analysis
  - 2.2. Principal components analysis
  - 2.3. Correspondence analysis
  - 2.4. Text science
3. Supervised learning
  - 3.1. Discriminant analysis
  - 3.2. Logistic regression
  - 3.3. Classification and regression trees
  - 3.4. Improving weak predictors
  - 3.5. Neural network models

\* Note that the list of topics covered may vary slightly depending on the nature of the business questions to be answered, and the content of the supporting data supplied by the delegates

### Timing

10:00 – 11:00 Session 1 (1 Hour)  
11:00 – 11:15 Break (15 min)  
11:15 – 12:15 Session 1 (1 Hour)  
12:15 – 12:45 Lunch (30 min)  
12:45 – 13:45 Session 1 (1 Hour)  
13:45 – 14:00 Break (15 min)  
14:00 – 15:00 Session 1 (1 Hour)