THE BIG-R BOOK

FROM DATA SCIENCE TO LEARNING MACHINES AND BIG DATA

— PART 01—

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THE BIG R-BOOK:
From Data Science to Big Data and Learning Machines

♡— **PART 01: Introduction** —♡

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These slides are to be used in with the book – for best experience, teachers will read the book *before* using the slides and students have access to the book and the code.

part 01: Introduction

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chapter 1:

The Big Picture with Kondratiev and Kardashev

in 1935 Kondratiev published his theory that captitalism devlops in waves. This remained true till today.

Now, momentum is gathering pace with a few strong contenders to pull a new wave of economic development and wealth creation, a new phase of exponential growth. These contenders include in our opinion:

- quantum computing (if we will manage to get them work, that is),
- nanotechnology and development in medical treatments,
- machine learning, artificial intelligence and big data.

part 01: Introduction
↓
chapter 2:

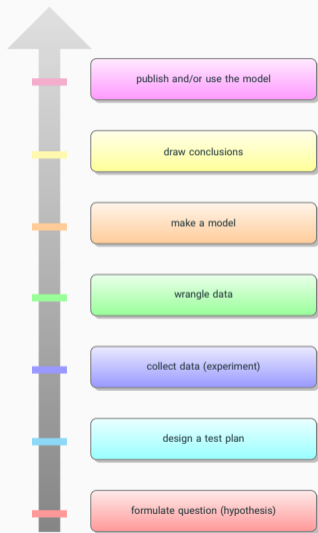# The Scientific Method and Data

Figure 1: A view on the steps in the scientific method for the data scientist and mathematical modeller, aka "quant." In a commercial company the communication and convincing or putting the model in production bear a lot of importance.
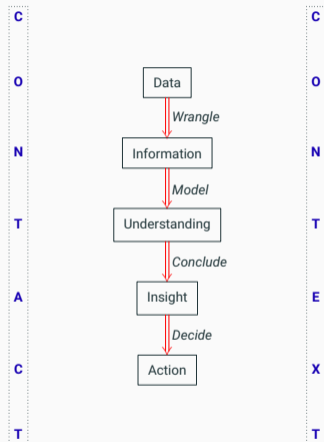
Figure 2: The role of data-science in a company is to take data and turn it into actionable insight. At every step – apart from technical issues that will be discussed in this book – it is of utmost importance to understand the *context* and limitations of data, business, regulations and customers. For effectiveness in every step, one needs to pay attention to communication and permanent *contact* with all stakeholders and environment is key.

part 01: Introduction
↓
chapter 3:

Conventions