

PACKT S

Essentials

Python Data Science Essentials - Learn the fundamentals of Data Science with Python

By Alberto Boschetti, Luca Massaron



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#### **Key Features**

- Quickly get familiar with data science using Python
- Save time and effort with all the essential tools explained
- Create effective data science projects and avoid common pitfalls with the help of examples and hints dictated by experience

#### **Book Description**

The book starts by introducing you to setting up your essential data science toolbox. Then it will guide you across all the data munging and preprocessing phases. This will be done in a manner that explains all the core data science activities related to loading data, transforming and fixing it for analysis, as well as exploring and processing it. Finally, it will complete the overview by presenting you with the main machine learning algorithms, the graph analysis technicalities, and all the visualization instruments that can make your life easier in presenting your results.

In this walkthrough, structured as a data science project, you will always be accompanied by clear code and simplified examples to help you understand the underlying mechanics and real-world datasets.

#### What you will learn

- Set up your data science toolbox using a Python scientific environment on Windows, Mac, and Linux
- Get data ready for your data science project
- Manipulate, fix, and explore data in order to solve data science problems
- Set up an experimental pipeline to test your data science hypothesis
- Choose the most effective and scalable learning algorithm for your data science tasks
- Optimize your machine learning models to get the best performance
- Explore and cluster graphs, taking advantage of interconnections and links in your data

#### About the Authors

**Alberto Boschetti** is a data scientist with expertise in signal processing and statistics. He holds a PhD in telecommunication engineering and currently lives and works in London. In his work projects, he faces challenges involving natural language processing (NLP), machine learning, and probabilistic graph models everyday.

**Luca Massaron** is a data scientist and marketing research director who specializes in multivariate statistical analysis, machine learning, and customer insight, with over a decade of experience in solving real-world problems and generating value for stakeholders by applying reasoning, statistics, data mining, and algorithms.

# **Table of Contents**

- 1. First Steps
- 2. Data Munging
- 3. The Data Science Pipeline
- 4. Machine Learning
- 5. Social Network Analysis
- 6. Visualization

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# **Editorial Review**

About the Author

# Alberto Boschetti

Alberto Boschetti is a data scientist with expertise in signal processing and statistics. He holds a PhD in telecommunication engineering and currently lives and works in London. In his work projects, he faces challenges involving natural language processing (NLP), machine learning, and probabilistic graph models everyday. He is very passionate about his job and he always tries to stay updated on the latest developments in data science technologies by attending meetups, conferences, and other events.

# Luca Massaron

Luca Massaron is a data scientist and marketing research director who specializes in multivariate statistical analysis, machine learning, and customer insight, with over a decade of experience in solving real-world problems and generating value for stakeholders by applying reasoning, statistics, data mining, and algorithms. From being a pioneer of web audience analysis in Italy to achieving the rank of a top 10 Kaggler, he has always been passionate about everything regarding data and analysis and about demonstrating the potentiality of data-driven knowledge discovery to both experts and nonexperts. Favoring simplicity over unnecessary sophistication, he believes that a lot can be achieved in data science by understanding its essentials.

# **Users Review**

# From reader reviews:

# **Stephanie Carlton:**

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