

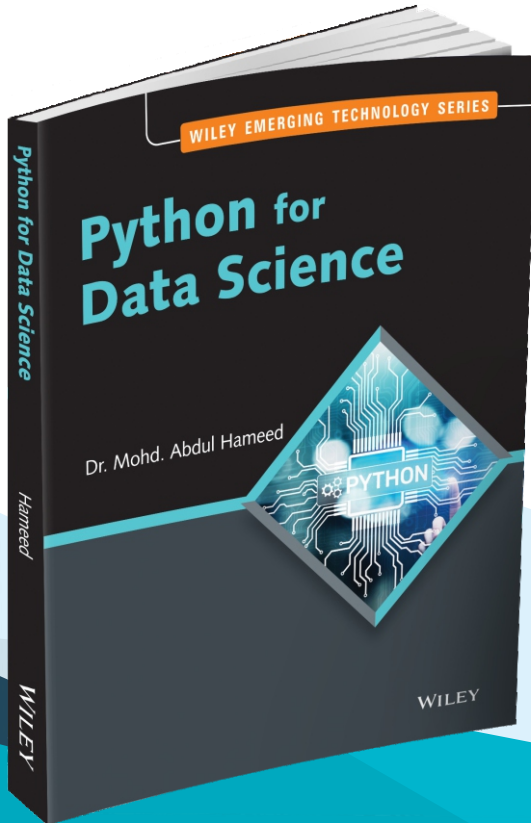
About the Author

Dr. Mohd. Abdul Hameed holds a PhD (Data Science) and MBA from Osmania University and is currently working as an Assistant Professor in the Department of Computer Science and Engineering, University College of Engineering, Osmania University. Further, he holds an additional responsibility as Training and Placement Officer at the College of Engineering, OU. He is a member of Board of Studies in Osmania University and Mahatma Gandhi University.

During the 14 years of teaching & research in the areas of Data Science, Data Mining, Machine Learning, and Big Data, he has supervised more than 30 postgraduate students and has delivered several extension lectures in Data Science across India.

Dr. Hameed has received a number of awards, including Best Scientist Award - 2020 by various NGOs, Vidya Siromani - 2017, among others. Dr. Hameed is the first person to apply Genetic Algorithm (GA) in the domain of Recommender Systems (RS) in a bid to improve their performance by improving the quality of GA clustering. His current research work is in the field of Image Processing where he has contributed to the improvement of the accuracy of Brain Tumour Detection System, which uses MRIs (Magnetic Resonance Imaging) of the brain as input. Dr. Hameed has developed a Heart Stroke Prediction System, first of its kind, which integrates K-mean clustering and Random Row Method with Decision Tree in the diagnosis of heart strokes in patients. In an attempt to yield maximum overall crime reduction, Dr. Hameed has developed prediction models which reveal causal relationships between different crime categories, which relationships are potentially used to mitigate crime, etc. These models apply complex neural network models and Machine Learning techniques using historic crime data. This research work is first of its kind to contribute to the crime analysis against the former untouchables of India.

Dr. Hameed also has his own YouTube channel (please refer to the following web link) where one can get information on different Data Science topics and related subjects. Web link: <https://www.youtube.com/channel/UCuS9E0WJqzR7izGlmnTfw>



Key Features

- ▶ Provides fastest ways to gain practical skills to independently solve Data Science problems.
- ▶ Contains the basic and advanced concepts to understand Python language.
- ▶ Introduces to fundamental concepts of Machine Learning.
- ▶ Filtered to core concepts
- ▶ Documented code examples
- ▶ Machine learning workflow
- ▶ Real-world project explanation
- ▶ Hands-on Data Science



Instructor Resources
available at

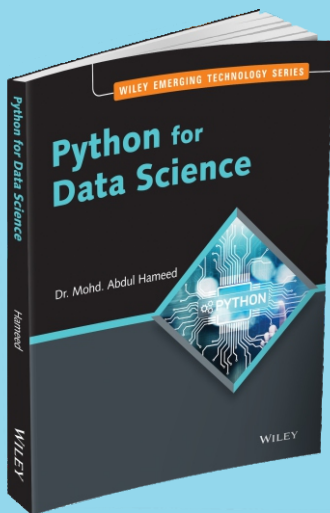
<https://www.wileyindia.com>

ISBN: 9789354243479

Pages: 296

₹ 429

WILEY



About the Book

Python for Data Science contains the basic and advanced concepts to understand Python language. It also furnishes the detailed procedure on how to implement a Data Science project. It intends to develop the skills to work independently on Data Science projects in readers. In addition to UG, PG, and PhD students, this book would be a ready reckoner to IT professionals.

While reading this book, readers will be instantly able to solve Data Science problems by themselves. It supports packages and modules, which motivates modularity in the code and also motivates code reuse. The book also covers the key concepts of Machine Learning, guides the learners to create their first models, addresses data visualization techniques, thus giving learners the skills they need to perform their own exploratory data analysis.

TABLE OF CONTENTS

1 Python Data Types, Values, and Identifiers

- 1.1 Introduction
 - 1.2 Assigning Values to Variables
 - 1.3 Multiple Assignment
 - 1.4 Naming Rules
 - 1.5 Understanding Reference Semantics
 - 1.6 Python's Standard Data Types
 - 1.7 Data Type Conversion
- Summary • Exercises*

2 Statements, Expressions, and Operators

- 2.1 Introduction
 - 2.2 Statements and Expressions
 - 2.3 Operators and Operands
 - 2.4 Arithmetic Operators
 - 2.5 Relational Operators
 - 2.6 Assignment Operators
 - 2.7 Bitwise Operators
 - 2.8 Logical Operators
 - 2.9 Membership Operators
 - 2.10 Identity Operators
 - 2.11 Precedence and Associativity of Python Operators
- Summary • Exercises*

3 Python's Flow Control Tools

- 3.1 Introduction
 - 3.2 if Statement
 - 3.3 if...else Statement
 - 3.4 if...elif...else Statement
 - 3.5 for Loop
 - 3.6 while Loop
 - 3.7 break and continue Statements
 - 3.8 pass Statement
- Summary Exercises*

4 Functions in Python

- 4.1 Introduction
 - 4.2 Standard Mathematical Functions
 - 4.3 Time Functions
 - 4.4 Random Functions
 - 4.5 Reasons to Write Your Own Functions
 - 4.6 Functions Basics
- Summary • Exercises*

5 Python Modules

- 5.1 Introduction
 - 5.2 import Statement
 - 5.3 Import by Renaming
 - 5.4 from..import Statement
 - 5.5 Importing All Names in a Module
 - 5.6 Module Search Path
 - 5.7 Reloading Modules
 - 5.8 dir() Function
 - 5.9 Packages
 - 5.10 Importing Modules from Packages
- Summary • Exercises*

6 Python Classes and Objects

- 6.1 Introduction
 - 6.2 Introduction to Object-Oriented Programming
 - 6.3 Object Class
 - 6.4 Operator Overloading in Python
- Summary • Exercises*

7 Files and Input/Output

- 7.1 Introduction
 - 7.2 File Objects
 - 7.3 Standard Files
 - 7.4 Command-Line Arguments
 - 7.5 File System
 - 7.6 Persistent Storage Modules
- Summary • Exercises*

8 Errors and Exceptions

- 8.1 Introduction
 - 8.2 Exceptions in Python
 - 8.3 Detecting and Handling Exceptions
 - 8.4 Raising Exceptions
 - 8.5 Assertions
- Summary • Exercises*

9 Pandas

- 9.1 Introduction
 - 9.2 Creating, Reading, and Writing
 - 9.3 Indexing, Selecting, and Assigning
 - 9.4 Summarizing Functions and Maps
 - 9.5 Grouping and Sorting
 - 9.6 Data Types and Missing Values
 - 9.7 Renaming and Combining
- Summary • Exercises*

10 Data Visualization with Seaborn

- 10.1 Introduction
 - 10.2 Line Charts
 - 10.3 Bar Charts and Heatmaps
 - 10.4 Scatter Plots
 - 10.5 Distributions
- Summary • Exercises*

11 Introduction to Machine Learning

- 11.1 Introduction
 - 11.2 Creating Your First AI Model
 - 11.3 Validating the AI Model
 - 11.4 Underfitting and Overfitting
 - 11.5 Random Forest Model
- Summary • Exercises*

Index

Wiley India Pvt. Ltd.

1402, 14th Floor World Trade Tower, Plot No. C-1, Sector-16, Noida 201301 INDIA
Tel. : +(91 120) 6291100 Email: csupport@wiley.com

wileyindia.com

[f /wileyindia](https://www.facebook.com/wileyindia) [/wileyindiapl](https://www.instagram.com/wileyindiapl) [/in/wileyindia](https://www.linkedin.com/company/wileyindia) [/WileyIndiaPL](https://www.youtube.com/channel/UCWileyIndiaPL)

WILEY