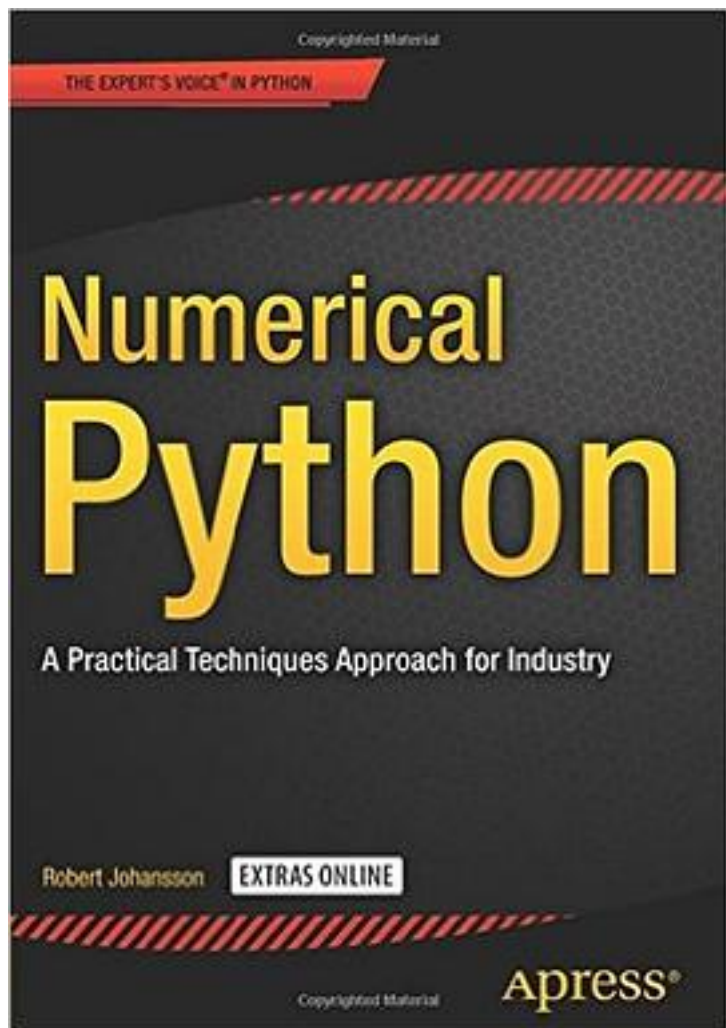# Numerical Python: A Practical Techniques Approach for Industry

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Numerical Python by Robert Johansson shows you how to leverage the numerical and mathematical modules in Python and its Standard Library as well as popular open source numerical Python packages like NumPy, FiPy, matplotlib and more to numerically compute solutions and mathematically model applications in a number of areas like big data, cloud computing, financial engineering, business management and more.

After reading and using this book, you'll get some takeaway case study examples of applications that can be found in areas like business management, big data/cloud computing, financial engineering (i.e., options trading investment alternatives), and even games.

Up until very recently, Python was mostly regarded as just a web scripting language. Well, computational scientists and engineers have recently discovered the flexibility and power of Python to do more. Big data analytics and cloud computing programmers are seeing Python's immense use. Financial engineers are also now employing Python in their work. Python seems to be evolving as a language that can even rival C++, Fortran, and Pascal/Delphi for numerical and mathematical computations.

作者介绍:

From the Back Cover

Numerical Python by Robert Johansson shows you how to leverage the numerical and mathematical capabilities in Python, its standard library, and the extensive ecosystem of computationally oriented Python libraries, including popular packages such as NumPy, SciPy, SymPy, Matplotlib, Pandas, and more, and how to apply these software tools in computational problem solving.

Python has gained widespread popularity as a computing language: It is nowadays employed for computing by practitioners in such diverse fields as for example scientific research, engineering, finance, and data analytics. One reason for the popularity of Python is its high-level and easy-to-work-with syntax, which enables the rapid development and exploratory computing that is required in modern computational work.

After reading and using this book, you will have seen examples and case studies from many areas of computing, and gained familiarity with basic computing techniques such as array-based and symbolic computing, all-around practical skills such as visualisation and numerical file I/O, general computat

ional methods such as equation solving, optimization, interpolation and integration, and domain-specific computational problems, such as differential equation solving, data analysis, statistical modeling and machine learning. Specific topics that are covered include:

How to work with vectors and matrices using NumPy

How to work with symbolic computing using SymPy

How to plot and visualize data with Matplotlib

How to solve linear and nonlinear equations with SymPy and SciPy

How to solve solve optimization, interpolation, and integration problems using SciPy

How to solve ordinary and partial differential equations with SciPy and FEniCS

How to perform data analysis tasks and solve statistical problems with Pandas and SciPy

How to work with statistical modeling and machine learning with statsmodels and scikit-learn

How to handle file I/O using HDF5 and other common file formats for numerical data

How to optimize Python code using Numba and Cython

About the Author

Robert Johansson is a numerical Python expert, computational scientist. He has experience with SciPy, NumPy and works on QuTiP, an open-source python framework for simulating the dynamics of quantum systems.

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标签

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评论

内容非常全，很实用

数值计算

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data science的教材。

数据计算不错的书，里面介绍了大量的数值计算方法以及相关的计算软件，而且作者不仅仅是在讲技术，还能给你
insight，看了之后能收获不少。唯一的缺点是书里面的软件版本已经太低了，安装新版本可能会出现部分代码运行错误，这个需要注意。而且书里面的代码有些你可能会跑不通，因为部分代码书里面没有给出，还是要单独参考下 GitHub
上的源码比较好，地址为 https://github.com/Apress/numerical-python

I read several pages of this book, it indeed inspired me of some ideas and thoughts especially when I was applying python into my research data. This book was written for those who are working in the science, finance and industry fields like me

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书评

Numerical Python: A Practical Techniques Approach for Industry，这本书讲了数值方法的大部分内容，很实用，后面还有统计的，时间序列和机器学习的内容，是数值计算方面不错的Python书籍。

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