

IPython Interactive Computing and Visualization Cookbook

By Cyrille Rossant

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IPython Interactive Computing and Visualization Cookbook By Cyrille Rossant

Over 100 hands-on recipes to sharpen your skills in high-performance numerical computing and data science with Python

About This Book

- Leverage the new features of the IPython notebook for interactive web-based big data analysis and visualization
- Become an expert in high-performance computing and visualization for data analysis and scientific modeling
- A comprehensive coverage of scientific computing through many hands-on, example-driven recipes with detailed, step-by-step explanations

Who This Book Is For

Intended to anyone interested in numerical computing and data science: students, researchers, teachers, engineers, analysts, hobbyists... Basic knowledge of Python/NumPy is recommended. Some skills in mathematics will help you understand the theory behind the computational methods.

What You Will Learn

- Code better by writing high-quality, readable, and well-tested programs; profiling and optimizing your code, and conducting reproducible interactive computing experiments
- Master all of the new features of the IPython notebook, including the interactive HTML/JavaScript widgets
- Analyze data with Bayesian and frequentist statistics (Pandas, PyMC, and R), and learn from data with machine learning (scikit-learn)
- Gain valuable insights into signals, images, and sounds with SciPy, scikit-image, and OpenCV
- Learn how to write blazingly fast Python programs with NumPy, PyTables, ctypes, Numba, Cython, OpenMP, GPU programming (CUDA and OpenCL), parallel IPython, MPI, and many more

In Detail

IPython is at the heart of the Python scientific stack. With its widely acclaimed web-based notebook, IPython is today an ideal gateway to data analysis and numerical computing in Python.

IPython Interactive Computing and Visualization Cookbook contains many ready-to-use focused recipes for high-performance scientific computing and data analysis. The first part covers programming techniques, including code quality and reproducibility; code optimization; high-performance computing through dynamic compilation, parallel computing, and graphics card programming. The second part tackles data science, statistics, machine learning, signal and image processing, dynamical systems, and pure and applied mathematics.

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Editorial Review

About the Author

Cyrille Rossant

Cyrille Rossant is a researcher in neuroinformatics, and is a graduate of Ecole Normale Superieure, Paris, where he studied mathematics and computer science. He has worked at Princeton University, University College London, and College de France. As part of his data science and software engineering projects, he gained experience in machine learning, high-performance computing, parallel computing, and big data visualization. He is one of the developers of Vispy, a high-performance visualization package in Python. He is the author of Learning IPython for Interactive Computing and Data Visualization, Packt Publishing, a beginner-level introduction to data analysis in Python, and the prequel of this book.

Users Review

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