Julia High performance

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Key Features

- Learn to code high reliability and high performance programs
- Stand out from the crowd by developing code that runs faster than your peers' codes
- This book is intended for developers who are interested in high performance technical programming.

Book Description

Julia is a high performance, high-level dynamic language designed to address the requirements of high-level numerical and scientific computing. Julia brings solutions to the complexities faced by developers while developing elegant and high performing code.

Julia High Performance will take you on a journey to understand the performance characteristics of your Julia programs, and enables you to utilize the promise of near C levels of performance in Julia.

You will learn to analyze and measure the performance of Julia code, understand how to avoid bottlenecks, and design your program for the highest possible performance. In this book, you will also see how Julia uses type information to achieve its performance goals, and how to use multuple dispatch to help the compiler to emit high performance machine code. Numbers and their arrays are obviously the key structures in scientific computing – you will see how Julia's design makes them fast. The last chapter will give you a taste of Julia's distributed computing capabilities.

What you will learn

- Discover the secrets behind Julia's speed
- Get a sense of the possibilities and limitations of Julia's performance
- Analyze the performance of Julia programs
- Measure the time and memory taken by Julia programs
- Create fast machine code using Julia's type information
- Define and call functions without compromising Julia's performance
- Understand number types in Julia
- Use Julia arrays to write high performance code
- Get an overview of Julia's distributed computing capabilities

About the Author

Avik Sengupta has worked on risk and trading systems in investment banking for many years, mostly using Java interspersed with snippets of the exotic R and K languages. This experience left him wondering whether there were better things out there. Avik's quest came to a happy conclusion with the appearance of Julia in 2012. He has been happily coding in Julia and contributing to it ever since.

Table of Contents

2. Analyzing Julia Performance
3. Types in Julia
4. Functions and Macros – Structuring Julia Code for High Performance
5. Fast Numbers
6. Fast Arrays
7. Beyond the Single Processor

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