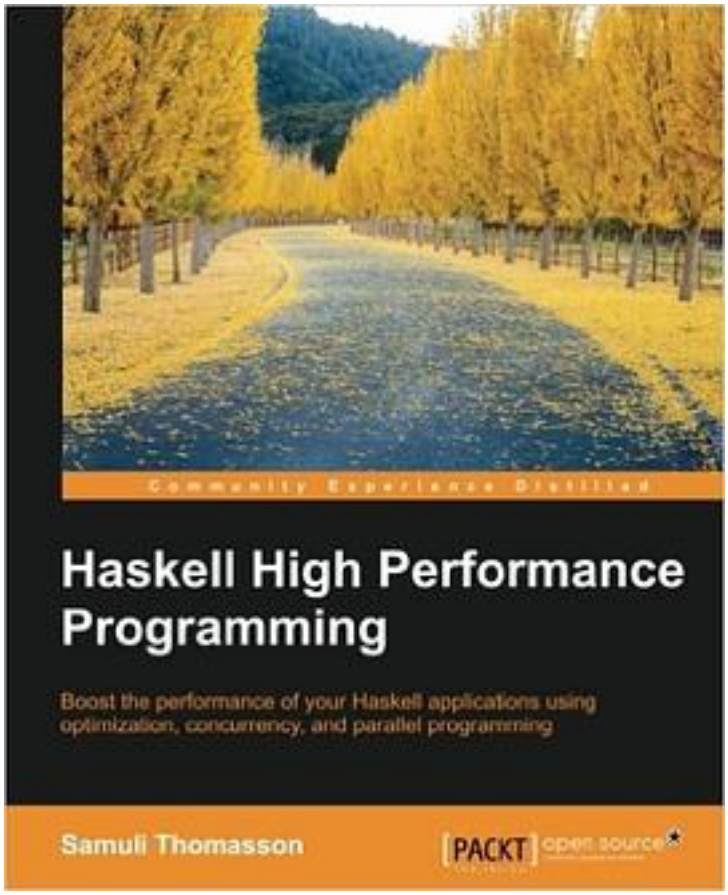
Haskell High Performance Programming



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Key Features

Explore the benefits of lazy evaluation, compiler features, and tools and libraries designed for high performance

Write fast programs at extremely high levels of abstraction

Work through practical examples that will help you address the challenges of writing efficient code

Book Description

Haskell, with its power to optimize the code and its high performance, is a natural candidate for high performance programming. It is especially well suited to stacking abstractions high with a relatively low performance cost. This book addresses the challenges of writing efficient code with lazy evaluation and techniques often used to optimize the performance of Haskell programs.

We open with an in-depth look at the evaluation of Haskell expressions and discuss optimization and benchmarking. You will learn to use parallelism and we'll explore the concept of streaming. We'll demonstrate the benefits of running multithreaded and concurrent applications. Next we'll guide you through various profiling tools that will help you identify performance issues in your program. We'll end our journey by looking at GPGPU, Cloud and Functional Reactive Programming in Haskell. At the very end there is a catalogue of robust library recommendations with code samples.

By the end of the book, you will be able to boost the performance of any app and prepare it to stand up to real-world punishment.

What you will learn

Program idiomatic Haskell that's also surprisingly efficient

Improve performance of your code with data parallelism, inlining, and strictness annotations

Profile your programs to identify space leaks and missed opportunities for optimization

Find out how to choose the most efficient data and control structures

Optimize the Glasgow Haskell Compiler and runtime system for specific programs

See how to smoothly drop to lower abstractions wherever necessary

Execute programming for the GPU with Accelerate

Implement programming to easily scale to the cloud with Cloud Haskell

作者介绍:

Samuli Thomasson is a long-time functional programming enthusiast from Finland who has used Haskell extensively, both as a pastime and commercially, for over four years. He enjoys working with great tools that help in getting things done nice and fast.

His current job at RELEX Solutions consists of providing technical solutions to a variety of practical problems. Besides functional programming, Samuli is interested in distributed systems, which he also studies at the University of Helsinki.

目录: Identifying Bottlenecks
Choosing the Correct Data Structures
Profile and Benchmark to Your Heart's Content
The Devil's in the Detail
Parallelize for Performance
I/O and Streaming
Concurrency and Performance
Tweaking the Compiler and Runtime System (GHC)
GHC Internals and Code Generation
Foreign Function Interface
Programming for the GPU with Accelerate
Scaling to the Cloud with Cloud Haskell
Functional Reactive Programming
Library Recommendations
・・・・・・(收起)

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标签

Haskell

计算机科学

编程

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评论

随书源码
https://github.com/PacktPublishing/Haskell-High-Performance-Programming

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良心之作，，高性能必备

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书评

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