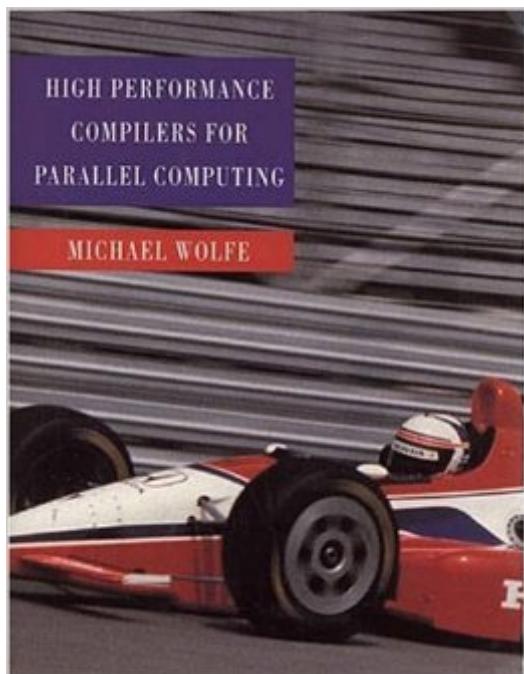


The book was found

# High-Performance Compilers For Parallel Computing



## Synopsis

This work covers everything necessary to build a competitive, advanced compiler for parallel or high-performance computers. It starts with a review of basic terms and algorithms such as graphs, trees and matrix algebra. Methods focus on analysis and synthesis, where analysis extracts information from the source program. The various restrictions and problems caused by different languages commonly used in such machines are shown.

## Book Information

Paperback: 500 pages

Publisher: Pearson; 1 edition (June 16, 1995)

Language: English

ISBN-10: 0805327304

ISBN-13: 978-0805327304

Product Dimensions: 6.9 x 1.5 x 9.1 inches

Shipping Weight: 2 pounds (View shipping rates and policies)

Average Customer Review: 4.2 out of 5 starsÂ  See all reviewsÂ  (6 customer reviews)

Best Sellers Rank: #1,450,243 in Books (See Top 100 in Books) #93 inÂ  Books > Computers & Technology > Programming > Languages & Tools > Compiler Design #126 inÂ  Books > Computers & Technology > Programming > Parallel Programming #281 inÂ  Books > Computers & Technology > Programming > Languages & Tools > Compilers

## Customer Reviews

This is a modern classic. If you develop compilers for high performance computing (HPC), this must be on your shelves. It has a heavy emphasis on Fortran, the workhorse of HPC, but is widely applicable to other languages as well. The majority of the book's content reflects the large majority of processors that carry today's HPC load: sequential, von Neumann engines, even the computing ensemble as a whole has lots of them. This book's real contribution is in its analysis of the loops that process arrays. Wolfe presents a number of ways to characterize dependencies, using quantitative techniques that go well beyond the graph-based presentations elsewhere. By casting the dependency problem in terms of integer programming or linear algebra, Wolfe makes huge bodies of problem-solving knowledge available to the compiler developer. He also uses these quantitative terms to give new insight into loop transformations that the reader may already understand. Despite the irreplaceable value of this book, I found it maddening to read. For some reason, the periods dropped off of nearly every sentence in the text. Then, just when I got used to that quirk, the periods

appeared again. Their coming and going was so irregular throughout the book that I never really got into a steady reading rhythm. A much worse problem appeared throughout the first chapter, though. It's an exceptional discussion of matrix multiplication, a staple of performance computing. The chapter presents it again and again, to demonstrate differences in looping constructs and the organization of memory access. That part of the discussion was great. The problem is that it's wrong - a systematic error, in seemingly every example, replaced the scalar multiplication at the core of the algorithm with addition.

[Download to continue reading...](#)

High-Performance Compilers for Parallel Computing Parallel Programming: Success in a Day: Beginners' Guide to Fast, Easy, and Efficient Learning of Parallel Programming (Parallel Programming, Programming, ... C++ Programming, Multiprocessor, MPI) Time Travel and Our Parallel Worlds: Part 3 - All New In-Depth Real Life Stories In the News (Time Travel and Parallel Worlds Book 6) Cloud Computing for Complete Beginners: Building and Scaling High-Performance Web Servers on the Cloud Modern Perspectives in Lattice QCD: Quantum Field Theory and High Performance Computing: Lecture Notes of the Les Houches Summer School: Volume 93, August 2009 RenderScript: parallel computing on Android, the easy way Fundamentals of Distributed Object Systems: The CORBA Perspective (Wiley Series on Parallel and Distributed Computing) Introduction to Parallel Computing (2nd Edition) High Blood Pressure Cure: How To Lower Blood Pressure Naturally in 30 Days (Alternative Medicine, Natural Cures, Natural Remedies, High Blood Pressure ... Cures for High Blood Pressure, High BP) GPU Computing Gems Emerald Edition (Applications of GPU Computing Series) Student Solutions Manual for Differential Equations: Computing and Modeling and Differential Equations and Boundary Value Problems: Computing and Modeling Compilers: Principles, Techniques, and Tools Compilers: Principles, Techniques, and Tools (2nd Edition) Writing Compilers and Interpreters Writing Compilers and Interpreters: A Software Engineering Approach Optimizing Compilers for Modern Architectures: A Dependence-based Approach Algorithms, Languages, Automata, And Compilers: A Practical Approach Compilers: Principles and Practice 500 High Fiber Recipes: Fight Diabetes, High Cholesterol, High Blood Pressure, and Irritable Bowel Syndrome with Delicious Meals That Fill You Up and Help You Shed Pounds! Foods High in Fiber Cookbook: List of High Fiber Foods for a Healthy Lifestyle - Recipes for High Fiber Foods

[Dmca](#)