Programming With Posix Threads Addison Wesley Professional Computing 1st First Edition By Butenhof David R Published By Addison Wesley 1997

Advanced Programming in the UNIX Environment
Algorithmic Differentiation of Pragma-Defined Parallel Regions
Scientific Programming and Computer Architecture
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Intel Threading Building Blocks
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13th International SPIN Workshop, Vienna, Austria, March 30 - April 1, 2006, Proceedings
Programming for the Real World
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Advanced Programming in the UNIX Environment Addison-Wesley Professional
Numerical programs often use parallel programming techniques such as OpenMP to compute the program's output values as efficient as possible. In addition, derivative values of these output values with respect to certain input values play a crucial role. To achieve code that computes not only the output values simultaneously but also the derivative values, this work introduces several source-to-source transformation rules. These rules are based on a technique called algorithmic differentiation. The main focus of this work lies on the important reverse mode of algorithmic differentiation. The inherent data-flow reversal of the reverse mode must be handled properly during the transformation. The first part of the work examines the transformations in a very general way since pragma-based parallel regions occur in many different kinds such as OpenMP, OpenACC, and Intel Phi. The second part describes the transformation rules of the most important OpenMP constructs.

Algorithmic Differentiation of Pragma-Defined Parallel Regions Morgan Kaufmann
This new edition of Linux for Embedded and Real-Time Applications provides a practical introduction to the basics and the latest developments in this rapidly evolving technology. Ideal for those new to using Linux in an embedded environment, it takes a hands-on approach and covers key concepts plus specific applications. Key features include: Substantially updated to focus on a specific ARM-based single board computer (SBC) as a target for embedded application programming Includes an introduction to Android programming With this book you will learn: The basics of Open Source, Linux and the embedded space How to set up a simple system and tool chain How to use simulation for initial application testing Network, graphics and Android programming How to use some of the many Linux components and tools How to configure and build the Linux kernel, BusyBox and U-Boot bootloader Provides a hands-on introduction for engineers and software developers who need to get up to speed quickly on embedded Linux, its operation and its capabilities – including Android Updated and changed accompanying tools, with a focus on the author’s specially-developed Embedded Linux Learning Kit
Scientific Programming and Computer Architecture Morgan Kaufmann

What others in the trenches say about The Pragmatic Programmer... “The cool thing about this book is that it’s great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there.” —Kent Beck, author of Extreme Programming Explained: Embrace Change “I found this book to be a great mix of solid advice and wonderful analogies!” —Martin Fowler, author of Refactoring and UML Distilled “I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I would worry about it being lost.” —Kevin Ruland, Management Science, MSG-Logistics “The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful.... By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike.” —John Lakos, author of Large-Scale C++ Software Design “This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients.” —Eric Vought, Software Engineer “Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company....” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham Straight from the programming trenches, The Pragmatic Programmer cuts through the increasing specialization and technicalities of modern software development to examine the core process--taking a requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, The Pragmatic Programmer illustrates the best practices and major pitfalls of many

different aspects of software development. Whether you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer.

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Programming with POSIX Threads

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The revision of the definitive guide to Unix system programming is now available in a more portable format.

An Introduction to Parallel Programming

Addison-Wesley Professional

Summary This bestseller has been updated and revised to cover all the latest changes to C++ 14 and 17! C++ Concurrency in Action, Second Edition teaches you everything you need to write robust and elegant multithreaded applications in C++17. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology You choose C++ when your applications need to run fast. Well-designed concurrency makes them go even faster. C++ 17 delivers strong support for the multithreaded, multiprocessor programming required for fast graphic processing, machine learning, and other performance-sensitive tasks. This exceptional book unpacks the features, patterns, and best practices of production-grade C++ concurrency. About the Book C++ Concurrency in Action, Second Edition is the definitive guide to writing elegant multithreaded applications in C++. Updated for C++ 17, it carefully addresses every aspect of concurrent development, from starting new threads to designing fully functional multithreaded algorithms and data structures. Concurrency master Anthony Williams presents examples and practical tasks in every chapter, including insights that will delight even the most experienced developer. What's inside Full coverage of new C++ 17 features Starting and managing threads Synchronizing concurrent operations Designing concurrent code Debugging multithreaded applications About the Reader Written for intermediate C and C++ developers. No prior experience with concurrency required. About the Author Anthony Williams has been an active member of the BSI C++ Panel since 2001 and is the developer of the just::thread Pro extensions to the C++ 11 thread library. Table of Contents Hello, world of concurrency in C++! Managing threads Sharing data between threads Synchronizing concurrent operations The C++ memory model and operations on atomic types Designing lock-based concurrent data structures Designing lock-free concurrent data structures Designing concurrent code Advanced thread management Parallel algorithms Testing and debugging multithreaded applications

Concurrent Programming in Java

Cengage Learning

An Introduction to Parallel Programming, Second Edition presents a tried-and-true tutorial approach that shows students how to develop effective parallel programs with MPI, Pthreads and OpenMP. As the first undergraduate text to directly address compiling and running parallel programs on multi-core and cluster architecture, this second edition carries forward its clear explanations for designing, debugging

and evaluating the performance of distributed and shared-memory programs while adding coverage of accelerators via new content on GPU programming and heterogeneous programming. New and improved user-friendly exercises teach students how to compile, run and modify example programs. Takes a tutorial approach, starting with small programming examples and building progressively to more challenging examples Explains how to develop parallel programs using MPI, Pthreads and OpenMP programming models A robust package of online ancillaries for instructors and students includes lecture slides, solutions manual, downloadable source code, and an image bank New to this edition: New chapters on GPU programming and heterogeneous programming New examples and exercises related to parallel algorithms

Programming with Qt Addison-Wesley Professional

Threads are a fundamental part of the Java platform. As multicore processors become the norm, using concurrency effectively becomes essential for building high-performance applications. Java SE 5 and 6 are a huge step forward for the development of concurrent applications, with improvements to the Java Virtual Machine to support high-performance, highly scalable concurrent classes and a rich set of new concurrency building blocks. In Java Concurrency in Practice , the creators of these new facilities explain not only how they work and how to use them, but also the motivation and design patterns behind them. However, developing, testing, and debugging multithreaded programs can still be very difficult; it is all too easy to create concurrent programs that appear to work, but fail when it matters most: in production, under heavy load. Java Concurrency in Practice arms readers with both the theoretical underpinnings and concrete techniques for building reliable, scalable, maintainable concurrent applications. Rather than simply offering an inventory of concurrency APIs and mechanisms, it provides design rules, patterns, and mental models that make it easier to build concurrent programs that are both correct and performant. This book covers: Basic concepts of concurrency and thread safety Techniques for building and composing thread-safe classes Using the concurrency building blocks in java.util.concurrent Performance optimization dos and don'ts Testing concurrent programs Advanced topics such as atomic variables, nonblocking algorithms, and the Java Memory Model

C++ Network Programming, Volume I "O'Reilly Media, Inc."

Innovations in hardware architecture, like hyper-threading or multicore processors, mean that parallel computing resources are available for inexpensive desktop computers. In only a few years, many standard software products will be based on concepts of parallel programming implemented on such hardware, and the range of applications will be much broader than that of scientific computing, up to now the main application area for parallel computing. Rauber and Rünger take up these recent developments in processor architecture by giving detailed descriptions of parallel programming techniques that are necessary for developing efficient programs for multicore processors as well as for parallel cluster systems and supercomputers. Their book is structured in three main parts, covering all areas of

parallel computing: the architecture of parallel systems, parallel programming models and environments, and the implementation of efficient application algorithms. The emphasis lies on parallel programming techniques needed for different architectures. For this second edition, all chapters have been carefully revised. The chapter on architecture of parallel systems has been updated considerably, with a greater emphasis on the architecture of multicore systems and adding new material on the latest developments in computer architecture. Lastly, a completely new chapter on general-purpose GPUs and the corresponding programming techniques has been added. The main goal of the book is to present parallel programming techniques that can be used in many situations for a broad range of application areas and which enable the reader to develop correct and efficient parallel programs. Many examples and exercises are provided to show how to apply the techniques. The book can be used as both a textbook for students and a reference book for professionals. The material presented has been used for courses in parallel programming at different universities for many years.
Taking you to the limit in Concurrency, OOP, and the most advanced capabilities of C Packt Publishing Ltd
With the same insight and authority that made their book The Unix Programming Environment a classic, Brian Kernighan and Rob Pike have written The Practice of Programming to help make individual programmers more effective and productive. The practice of programming is more than just writing code. Programmers must also assess tradeoffs, choose among design alternatives, debug and test, improve performance, and maintain software written by themselves and others. At the same time, they must be concerned with issues like compatibility, robustness, and reliability, while meeting specifications. The Practice of Programming covers all these topics, and more. This book is full of practical advice and real-world examples in C, C++, Java, and a variety of special-purpose languages. It includes chapters on: debugging: finding bugs quickly and methodically testing: guaranteeing that software works correctly and reliably performance: making programs faster and more compact portability: ensuring that programs run everywhere without change design: balancing goals and constraints to decide which algorithms and data structures are best interfaces: using abstraction and information hiding to control the interactions between components style: writing code that works well and is a pleasure to read notation: choosing languages and tools that let the machine do more of the work Kernighan and Pike have distilled years of experience writing programs, teaching, and working with other programmers to create this book. Anyone who writes software will profit from the principles and guidance in The Practice of Programming .
PThreads Programming Springer
The Go Programming Language is the authoritative resource for any programmer who wants to learn Go. It shows how to write clear and idiomatic Go to solve real-world problems. The book does not assume prior knowledge of Go nor experience with any specific language, so you'll find it accessible whether you're most comfortable with JavaScript, Ruby, Python, Java, or C++. The first chapter is a tutorial on the basic concepts of Go, introduced through programs for file I/O and text processing,

simple graphics, and web clients and servers. Early chapters cover the structural elements of Go programs: syntax, control flow, data types, and the organization of a program into packages, files, and functions. The examples illustrate many packages from the standard library and show how to create new ones of your own. Later chapters explain the package mechanism in more detail, and how to build, test, and maintain projects using the go tool. The chapters on methods and interfaces introduce Go’s unconventional approach to object-oriented programming, in which methods can be declared on any type and interfaces are implicitly satisfied. They explain the key principles of encapsulation, composition, and substitutability using realistic examples. Two chapters on concurrency present in-depth approaches to this increasingly important topic. The first, which covers the basic mechanisms of goroutines and channels, illustrates the style known as communicating sequential processes for which Go is renowned. The second covers more traditional aspects of concurrency with shared variables. These chapters provide a solid foundation for programmers encountering concurrency for the first time. The final two chapters explore lower-level features of Go. One covers the art of metaprogramming using reflection. The other shows how to use the unsafe package to step outside the type system for special situations, and how to use the cgo tool to create Go bindings for C libraries. The book features hundreds of interesting and practical examples of well-written Go code that cover the whole language, its most important packages, and a wide range of applications. Each chapter has exercises to test your understanding and explore extensions and alternatives. Source code is freely available for download from http://gopl.io/ and may be conveniently fetched, built, and installed using the go get command.

Writing Portable GUI applications on Unix and Win32 FT Press

Programming with POSIX ThreadsAddison-Wesley Professional

Real-Time Embedded Systems "O'Reilly Media, Inc."

UNIX, UNIX LINUX & UNIX TCL/TK. Write software that makes the most effective use of the Linux system, including the kernel and core system libraries. The majority of both Unix and Linux code is still written at the system level, and this book helps you focus on everything above the kernel, where applications such as Apache, bash, cp, vim, Emacs, gcc, gdb, glibc, ls, mv, and X exist. Written primarily for engineers looking to program at the low level, this updated edition of Linux System Programming gives you an understanding of core internals that makes for better code, no matter where it appears in the stack. -- Provided by publisher.

Java Concurrency in Practice Prentice-Hall PTR

This is an expert guide to the 2.6 Linux Kernel's most important component: the Virtual Memory Manager.

Concepts and Strategies in Multicore Application Programming Elsevier

This volume contains the proceedings from the workshops held in conjunction with the IEEE International Parallel and Distributed Processing Symposium, IPDPS 2000, on 1-5 May 2000 in Cancun, Mexico. The workshopsprovidea forum for bringing together researchers,practiti- ers, and designers from various backgrounds to discuss the state of the art in parallelism.Theyfocusondi

erentaspectsofparallelism,fromruntimesystems to formal methods, from optics to irregular problems, from biology to networks of personal computers, from embedded systems to programming environments; the following workshops are represented in this volume: { Workshop on Personal Computer Based Networks of Workstations { Workshop on Advances in Parallel and Distributed Computational Models { Workshop on Par. and Dist. Comp. in Image, Video, and Multimedia { Workshop on High-Level Parallel Prog. Models and Supportive Env. { Workshop on High Performance Data Mining { Workshop on Solving Irregularly Structured Problems in Parallel { Workshop on Java for Parallel and Distributed Computing { WorkshoponBiologicallyInspiredSolutions to ParallelProcessingProblems { Workshop on Parallel and Distributed Real-Time Systems { Workshop on Embedded HPC Systems and Applications { Recon gurable Architectures Workshop { Workshop on Formal Methods for Parallel Programming { Workshop on Optics and Computer Science { Workshop on Run-Time Systems for Parallel Programming { Workshop on Fault-Tolerant Parallel and Distributed Systems All papers published in the workshops proceedings were selected by the p- gram committee on the basis of referee reports. Each paper was reviewed by independent referees who judged the papers for originality, quality, and cons- tency with the themes of the workshops.

Shared Memory Application Programming Addison-Wesley Professional

"The security of information systems has not improved at a rate consistent with the growth and sophistication of the attacks being made against them. To address this problem, we must improve the underlying strategies and techniques used to create our systems. Specifically, we must build security in from the start, rather than append it as an afterthought. That's the point of Secure Coding in C and C++. In careful detail, this book shows software developers how to build high-quality systems that are less vulnerable to costly and even catastrophic attack. It's a book that every developer should read before the start of any serious project." --Frank Abagnale, author, lecturer, and leading consultant on fraud prevention and secure documents Learn the Root Causes of Software Vulnerabilities and How to Avoid Them Commonly exploited software vulnerabilities are usually caused by avoidable software defects. Having analyzed nearly 18,000 vulnerability reports over the past ten years, the CERT/Coordination Center (CERT/CC) has determined that a relatively small number of root causes account for most of them. This book identifies and explains these causes and shows the steps that can be taken to prevent exploitation. Moreover, this book encourages programmers to adopt security best practices and develop a security mindset that can help protect software from tomorrow's attacks, not just today's. Drawing on the CERT/CC's reports and conclusions, Robert Seacord systematically identifies the program errors most likely to lead to security breaches, shows how they can be exploited, reviews the potential consequences, and presents secure alternatives. Coverage includes technical detail on how to Improve the overall security of any C/C++ application Thwart buffer overflows and stack-smashing attacks that exploit insecure string manipulation logic Avoid

vulnerabilities and security flaws resulting from the incorrect use of dynamic memory management functions Eliminate integer-related problems: integer overflows, sign errors, and truncation errors Correctly use formatted output functions without introducing format-string vulnerabilities Avoid I/O vulnerabilities, including race conditions Secure Coding in C and C++ presents hundreds of examples of secure code, insecure code, and exploits, implemented for Windows and Linux. If you're responsible for creating secure C or C++ software--or for keeping it safe--no other book offers you this much detailed, expert assistance.

John Wiley & Sons

This volume contains the proceedings of the 19th International Conference on Logic Programming, ICLP 2003, which was held at the Tata Institute of F- damental Research in Mumbai, India, during 9-13 December, 2003. ICLP 2003 was colocated with the 8th Asian Computing Science Conference, ASIAN 2003, andwasfollowedbythe23rdConferenceon FoundationsofSoftwareTechnology and Theoretical Computer Science, FSTTCS 2003. The latter event was hosted by the Indian Institute of Technology in Mumbai. In addition, there were?ve satellite workshops associated with ICLP 2003: - PPSWR 2003, Principles and Practice of Semantic Web Reasoning, 8th Dec. 2003, organized by Franı cois Bry, Nicola Henze, and Jan Maluszynski. - COLOPS 2003, COnstraint & LOgic Programming in Security, 8th Dec. 2003, organized by Martin Leucker, Justin Pearson, Fred Spiessens, and Frank D. Valencia. - WLPE 2003, Workshop on Logic Programming Environments, organized by Alexander Serebrenik and Fred Mesnard. - CICLOPS2003,ImplementationofConstraintandLOgicProgrammingS- tems, 14th Dec. 2003, organized by Michel Ferreira and Ricardo Lopes. - SVV 2003, Software Veri?cation and Validation, 14th Dec. 2003, organized by Sandro Etalle, Supratik Mukhopadhyay, and Abhik Roychoudhury.

Linux System Programming John Wiley & Sons

Advances in Parallel Computing series presents the theory and use of of parallel computer systems, including vector, pipeline, array, fifth and future generation computers and neural computers. This volume features original research work, as well as accounts on practical experience with and techniques for the use of parallel computers.

C++ Concurrency in Action John Wiley & Sons

The popular open source KDE desktop environment for Unix was built with Qt, a C++ class library for writing GUI applications that run on Unix, Linux, Windows 95/98, Windows 2000, and Windows NT platforms. Qt emulates the look and feel of Motif, but is much easier to use. Best of all, after you have written an application with Qt, all you have to do is recompile it to have a version that works on Windows. Qt also emulates the look and feel of Windows, so your users get native-looking interfaces.Platform independence is not the only benefit. Qt is flexible and highly optimized. You'll find that you need to write very little, if any, platform-dependent code because Qt already has what you need. And Qt is free for open source and Linux development.Although programming with Qt is straightforward and feels natural once you get the hang of it, the learning curve can be steep. Qt comes with excellent reference documentation, but beginners often find the included

tutorial is not enough to really get started with Qt. That's whereProgramming with Qt steps in. You'll learn how to program in Qt as the book guides you through the steps of writing a simple paint application. Exercises with fully worked out answers help you deepen your understanding of the topics. The book presents all of the GUI elements in Qt, along with advice about when and how to use them, so you can make full use of the toolkit. For seasoned Qt programmers, there's also lots of information on advanced 2D transformations, drag-and-drop, writing custom image file filters, networking with the new Qt Network Extension, XML processing, Unicode handling, and more.Programming with Qt helps you get the most out of this powerful, easy-to-use, cross-platform toolkit. It's been completely updated for Qt Version 3.0 and includes entirely new information on rich text, Unicode/double byte characters, internationalization, and network programming.

42 Specific Ways to Improve Your Use of C++11 and C++14 "O'Reilly Media, Inc."

This book constitutes the refereed proceedings of the 13th International SPIN workshop on Model Checking Software, SPIN 2006, held in Vienna, Austria in March/April 2006 as satellite event of ETAPS 2006. The 16 revised full papers presented together with three tool presentation papers were carefully reviewed and selected from 44 submissions. The papers are organized in topical sections.

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