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this ima volume in mathematics and its applications parallel solution of partial differential equations is based on the proceedings of a workshop with the same title the work shop was an integral part of the 1996 97ima program on mathematics in high performance computing i would like to thank petter bj0rstad of the institutt for informatikk university of bergen and mitchell luskin of the school of mathematics university of minnesota for their excellent work as organizers of the meeting and for editing the proceedings i also take this opportunity to thank the national science foundation nsf department of energy doe and the army research office aro whose financial support made the workshop possible willard miller jr professor and director v preface the numerical solution of partial differential equations has been of major importance to the development of many technologies and has been the target of much of the development of parallel computer hardware and software parallel computers offer the promise of greatly increased performance and the routine calculation of previously intractable problems the papers in this volume were presented at the ima workshop on the parallel solution of pde held during june 9 13 1997 the workshop brought together leading numerical analysts computer scientists and engineers to assess the state of the art and to consider future directions foreword by bjarne stroustrup software is generally acknowledged to be the single greatest obstacle preventing mainstream adoption of massively parallel computing while sequential applications are routinely ported to platforms ranging from pcs to mainframes most parallel programs only ever run on one type of machine one reason for this is that most parallel programming systems have failed to insulate their users from the architectures of the machines on which they have run those that have been platform independent have usually also had poor performance many researchers now believe that object oriented languages may offer a solution by hiding the architecture specific constructs required for high performance inside platform independent abstractions parallel object oriented programming systems may be able to combine the speed of massively parallel computing with the comfort of sequential programming parallel programming using c describes fifteen parallel programming systems based on c the most popular object oriented language of today these systems cover the whole spectrum of parallel programming paradigms from data parallelism through dataflow and distributed shared memory to message passing control parallelism for the parallel programming community a common parallel application is discussed in each chapter as part of the description of the system itself by comparing the implementations of the polygon overlay problem in each system the reader can get a better sense of their expressiveness and functionality for a common problem for the systems community the chapters contain a discussion of the implementation of the various compilers and runtime systems in addition to discussing the performance of polygon overlay several of the contributors also discuss the performance of other more substantial applications for the research community the contributors discuss the motivations for and philosophy of their systems as well many of the chapters include critiques that complete the research arc by pointing out possible future research directions finally for the object oriented community there are many examples of how encapsulation inheritance and polymorphism can be used to control the complexity of developing debugging and tuning parallel software this volume reviews in the context of partial differential equations algorithm development that has been specifically aimed at computers that exhibit some form of parallelism emphasis is on the solution of pdes because these are typically the problems that generate high computational demands the authors discuss architectural features of these computers inasmuch as they influence algorithm performance and provide insight into algorithm characteristics that allow effective use of hardware this book constitutes the refereed proceedings of the third international euro par conference held in passau germany in august 1997 the 178 revised papers presented were selected from more than 300 submissions on the basis of 1101 reviews the papers are organized in accordance with the conference workshop structure in tracks on support tools and environments routing and communication automatic parallelization parallel and distributed algorithms programming languages programming models and methods numerical algorithms parallel architectures hpc applications scheduling and load balancing performance evaluation instruction level parallelism database systems symbolic computation real time systems and an esprit workshop an overview of the multidisciplinary field of data mining this book focuses specifically on new methodologies and case studies included are case studies written by 44 leading scientists and talented young scholars from seven different countries topics covered include data mining based on rough sets the impact of missing data and mining free text for structure in addition the four basic mining operations supported by numerous mining techniques are addressed predictive model creation supported by supervised induction techniques link analysis supported by association discovery and sequence discovery techniques db segmentation supported by clustering techniques and deviation detection supported by statistical techniques massively parallel systems mpss with their scalable computation and storage space promises are becoming increasingly important for high performance computing the growing acceptance of mpss in academia is clearly apparent however in industrial companies their usage remains low the programming of mpss is still the big obstacle and solving this software problem is sometimes referred to as one of the most challenging tasks of the 1990 s the 1994 working conference on programming environments for massively parallel systems was the latest event of the working group wg 10 3 of the international federation for information processing ifip in this field it succeeded the 1992 conference in edinburgh on programming environments for parallel computing the research and development work discussed at the conference addresses the entire spectrum of software problems including virtual machines which are less cumbersome to program more convenient programming models advanced programming languages and especially more sophisticated programming tools but also algorithms and applications brings together analyzes and contextualizes the latest findings and practical applications polyphosphazenes an emerging class of polymers include macromolecules which have been proven to be biocompatible biodegradable and bioactive their unprecedented structural diversity and unique properties make them suitable as vaccine

adjuvants microencapsulating agents biodegradable materials scaffolds for tissue engineering biocompatible coatings and carriers for gene delivery polyphosphazenes for biomedical applications offers a thorough review of polyphosphazene research findings in the life sciences chemistry and chemical engineering it emphasizes biomedical applications as well as recent advances in polyphosphazene development such as high throughput discovery and the latest controlled methods of synthesis the book brings together analyzes and contextualizes a wealth of knowledge that previously could only be found scattered throughout the scientific literature following two introductory chapters the book reviews vaccine delivery and immunomodulation biomaterials drug delivery systems biodetection well defined polyphosphazenes synthetic aspects and novel molecular architectures all the chapters have been written by leading researchers in the field editor alexander andrianov who has led the effort to commercialize polyphosphazenes for biomedical applications has carefully reviewed and edited all chapters to ensure readability accuracy and thoroughness polyphosphazenes for biomedical applications is not only intended for researchers working in polyphosphazene chemistry but also for all researchers seeking solutions to problems arising in the areas of biomaterials drug delivery systems and controlled release formulations plastic films are high performance materials which play an essential part in modern life the plastics films industry uses state of the art manufacturing processes and is continuously seeking out new technologies to improve its performance the understanding of the nature of plastic films their production techniques applications and their characterisation is essential for producing new types of plastic films this handbook has been written to discuss the production and main uses of plastic films plastic films are high performance materials which play an essential part in modern life plastic films are mostly used in packaging applications but as will be seen from this book they are also used in the agricultural medical and engineering fields the plastics films industry uses state of the art manufacturing processes and is continuously seeking out new technologies to improve its performance the understanding of the nature of plastic films their production techniques applications and their characterisation is essential for producing new types of plastic films this handbook has been written to discuss the production and main uses of plastic films asia has become the new battle ground for the war against hiv aids the magnitude of the potential public health problems caused by aids in this populous continent may become a catastrophic disaster a 10 rate of prevalence of hiv 1 in india and china alone would mean more than 200 million people are infected with hiv aids in asia is useful as a comprehensive up to date aids reference book for public health and medical professionals this volume provides concrete information on the diagnosis treatment care prevention and impact of aids part i contains snapshots of hiv aids in asia countries and regions included in this section are thailand india china japan vietnam laos cambodia myanmar malaysia indonesia the philippines pakistan nepal sri lanka hawaii and the pacific islands hong kong and taiwan part ii addresses the molecular epidemiology of hiv aids part iii deals with the diagnosis surveillance and projected scenarios of the aids epidemic part iv outlines prevention efforts and treatment options part v provides an overview of the ongoing collaborative efforts involved in several different nations in the worldwide war against aids this volume will be invaluable to all the public health professionals and researchers working in this field the book is a useful addition to the hiv aids literature aids in asia offers a comprehensive interesting overview of the epidemic there and of general issues that will influence its progression roger detels md ms university of california los angeles the journal of the american medical association book review 293 15 algorithms and theory of computation handbook second edition in a two volume set provides an up to date compendium of fundamental computer science topics and techniques it also illustrates how the topics and techniques come together to deliver efficient solutions to important practical problems new to the second edition along with updating and revising many of the existing chapters this second edition contains more than 20 new chapters this edition now covers external memory parameterized self stabilizing and pricing algorithms as well as the theories of algorithmic coding privacy and anonymity databases computational games and communication networks it also discusses computational topology computational number theory natural language processing and grid computing and explores applications in intensity modulated radiation therapy voting dna research systems biology and financial derivatives this best selling handbook continues to help computer professionals and engineers find significant information on various algorithmic topics the expert contributors clearly define the terminology present basic results and techniques and offer a number of current references to the in depth literature they also provide a glimpse of the major research issues concerning the relevant topics this book constitutes the thoroughly refereed post conference proceedings of the 8th international conference on high performance computing for computational science vecpar 2008 held in toulouse france in june 2008 the 51 revised full papers presented together with the abstract of a surveying and look ahead talk were carefully reviewed and selected from 73 submissions the papers are organized in topical sections on parallel and distributed computing cluster and grid computing problem solving environment and data centric numerical methods linear algebra computing in geosciences and biosciences imaging and graphics computing for aerospace and engineering and high performance data management in grid environments pcmag com is a leading authority on technology delivering labs based independent reviews of the latest products and services our expert industry analysis and practical solutions help you make better buying decisions and get more from technology annotation this book constitutes the refereed proceedings of the 11th international conference on high performance computing hipc 2004 held in bangalore india in december 2004 the 48 revised full papers presented were carefully reviewed and selected from 253 submissions the papers are organized in topical sections on wireless network management compilers and runtime systems high performance scientific applications peer to peer and storage systems high performance processors and routers grids and storage systems energy aware and high performance networking and distributed algorithms infoworld is targeted to senior it professionals content is segmented into channels and topic centers infoworld also celebrates people companies and projects semiannual with semiannual and annual indexes references to all scientific and technical literature coming from doe its laboratories energy centers and contractors includes all works deriving from doe other related government sponsored information and foreign nonnuclear information arranged under 39 categories e g biomedical sciences basic studies biomedical sciences applied studies health and safety and fusion energy entry

gives bibliographical information and abstract corporate author subject report number indexes this monograph evolved from my ph d dissertation completed at the laboratory of computer science mit during the summer of 1986 in my dissertation i proposed a pipelined code mapping scheme for array operations on static dataflow architectures the main addition to this work is found in chapter 12 reflecting new research results developed during the last three years since i joined mcgill university results based upon the principles in my dissertation the terminology dataflow soft ware pipelining has been consistently used since publication of our 1988 paper on the argument fetching dataflow architecture model at mcgill university 43 in the first part of this book we describe the static data flow graph model as an operational model for concurrent computation we look at timing considerations for program graph execution on an ideal static dataflow computer examine the notion of pipe lining and characterize its performance we discuss balancing techniques used to transform certain graphs into fully pipelined data flow graphs in particular we show how optimal balancing of an acyclic data flow graph can be formulated as a linear programming problem for which an optimal solution exists as a major result we show the optimal balancing problem of acyclic data flow graphs is reduceable to a class of linear programming problem the net work flow problem for which well known efficient algorithms exist this result disproves the conjecture that such problems are computationally hard infoworld is targeted to senior it professionals content is segmented into channels and topic centers infoworld also celebrates people companies and projects this title provides a forum where expert insights are presented on the subject of linking three current phenomena software evolution uml and xml this book presents a set of 11 papers accompanying the lectures of leading researchers given at the 7th edition of the international school on formal methods for the design of computer communication and software systems sfm 2007 held in bertinoro italy in may june 2007 sfm 2007 was devoted to formal techniques for performance evaluation and covered several aspects of the field comprehensive nanoscience and technology second edition five volume set allows researchers to navigate a very diverse interdisciplinary and rapidly changing field with up to date comprehensive and authoritative coverage of every aspect of modern nanoscience and nanotechnology presents new chapters on the latest developments in the field covers topics not discussed to this degree of detail in other works such as biological devices and applications of nanotechnology compiled and written by top international authorities in the field this book presents the thoroughly refereed post workshop proceedings of the 9th international workshop on languages and compilers for parallel computing lcpc 96 held in san jose california in august 1996 the book contains 35 carefully revised full papers together with nine poster presentations the papers are organized in topical sections on automatic data distribution and locality enhancement program analysis compiler algorithms for fine grain parallelism instruction scheduling and register allocation parallelizing compilers communication optimization compiling hpf and run time control of parallelism for more than 40 years computerworld has been the leading source of technology news and information for it influencers worldwide computerworld s award winning site computerworld com twice monthly publication focused conference series and custom research form the hub of the world s largest global it media network this book elucidates how cybergis that is new generation geographic information science and systems gis based on advanced computing and cyberinfrastructure transforms computation and data intensive geospatial discovery and innovation it comprehensively addresses opportunities and challenges roadmaps for research and development and major progress trends and impacts of cybergis in the era of big data the book serves as an authoritative source of information to fill the void of introducing this exciting and growing field by providing a set of representative applications and science drivers of cybergis this book demonstrates how cybergis has been advanced to enable cutting edge scientific research and innovative geospatial application development such cybergis advances are contextualized as diverse but interrelated science and technology frontiers the book also emphasizes several important social dimensions of cybergis such as for empowering deliberative civic engagement and enabling collaborative problem solving through structured participation in sum this book will be a great resource to students academics and geospatial professionals for leaning cutting edge cybergis geospatial data science high performance computing and related applications and sciences gpu computing gems jade edition offers hands on proven techniques for general purpose gpu programming based on the successful application experiences of leading researchers and developers one of few resources available that distills the best practices of the community of cuda programmers this second edition contains 100 new material of interest across industry including finance medicine imaging engineering gaming environmental science and green computing it covers new tools and frameworks for productive gpu computing application development and provides immediate benefit to researchers developing improved programming environments for gpus divided into five sections this book explains how gpu execution is achieved with algorithm implementation techniques and approaches to data structure layout more specifically it considers three general requirements high level of parallelism coherent memory access by threads within warps and coherent control flow within warps chapters explore topics such as accelerating database searches how to leverage the fermi gpu architecture to further accelerate prefix operations and gpu implementation of hash tables there are also discussions on the state of gpu computing in interactive physics and artificial intelligence programming tools and techniques for gpu computing and the edge and node parallelism approach for computing graph centrality metrics in addition the book proposes an alternative approach that balances computation regardless of node degree variance software engineers programmers hardware engineers and advanced students will find this book extremely useful this second volume of gpu computing gems offers 100 new material of interest across industry including finance medicine imaging engineering gaming environmental science green computing and more covers new tools and frameworks for productive gpu computing application development and offers immediate benefit to researchers developing improved programming environments for gpus even more hands on proven techniques demonstrating how general purpose gpu computing is changing scientific research distills the best practices of the community of cuda programmers each chapter provides insights and ideas as well as hands on skills applicable to a variety of fields

Parallel Solution of Partial Differential Equations

2012-12-06

this ima volume in mathematics and its applications parallel solution of partial differential equations is based on the proceedings of a workshop with the same title the work shop was an integral part of the 1996 97ima program on mathematics in high performance computing i would like to thank petter bj0rstad of the institutt for informatikk university of bergen and mitchell luskin of the school of mathematics university of minnesota for their excellent work as organizers of the meeting and for editing the proceedings i also take this opportunity to thank the national science foundation nsf department of energy doe and the army research office aro whose financial support made the workshop possible willard miller jr professor and director v preface the numerical solution of partial differential equations has been of major importance to the development of many technologies and has been the target of much of the development of parallel computer hardware and software parallel computers offer the promise of greatly increased performance and the routine calculation of previously intractable problems the papers in this volume were presented at the ima workshop on the parallel solution of pde held during june 9 13 1997 the workshop brought together leading numerical analysts computer scientists and engineers to assess the state of the art and to consider future directions

Parallel Programming Using C++

1996-07-08

foreword by bjarne stroustrup software is generally acknowledged to be the single greatest obstacle preventing mainstream adoption of massively parallel computing while sequential applications are routinely ported to platforms ranging from pcs to mainframes most parallel programs only ever run on one type of machine one reason for this is that most parallel programming systems have failed to insulate their users from the architectures of the machines on which they have run those that have been platform independent have usually also had poor performance many researchers now believe that object oriented languages may offer a solution by hiding the architecture specific constructs required for high performance inside platform independent abstractions parallel object oriented programming systems may be able to combine the speed of massively parallel computing with the comfort of sequential programming parallel programming using c describes fifteen parallel programming systems based on c the most popular object oriented language of today these systems cover the whole spectrum of parallel programming paradigms from data parallelism through dataflow and distributed shared memory to message passing control parallelism for the parallel programming community a common parallel application is discussed in each chapter as part of the description of the system itself by comparing the implementations of the polygon overlay problem in each system the reader can get a better sense of their expressiveness and functionality for a common problem for the systems community the chapters contain a discussion of the implementation of the various compilers and runtime systems in addition to discussing the performance of polygon overlay several of the contributors also discuss the performance of other more substantial applications for the research community the contributors discuss the motivations for and philosophy of their systems as well many of the chapters include critiques that complete the research arc by pointing out possible future research directions finally for the object oriented community there are many examples of how encapsulation inheritance and polymorphism can be used to control the complexity of developing debugging and tuning parallel software

Solution of Partial Differential Equations on Vector and Parallel Computers

1985-01-01

this volume reviews in the context of partial differential equations algorithm development that has been specifically aimed at computers that exhibit some form of parallelism emphasis is on the solution of pdes because these are typically the problems that generate high computational demands the authors discuss architectural features of these computers inasmuch as they influence algorithm performance and provide insight into algorithm characteristics that allow effective use of hardware

Euro-Par'97 Parallel Processing

2005-11-23

this book constitutes the refereed proceedings of the third international euro par conference held in passau germany in august 1997 the 178 revised papers presented were selected from more than 300 submissions on the basis of 1101 reviews the papers are organized in accordance with the conference workshop structure in tracks on support tools and environments routing and communication automatic parallelization parallel and distributed algorithms programming languages programming models and methods numerical algorithms parallel architectures hpc applications scheduling and load balancing performance evaluation instruction level parallelism database systems symbolic computation real time systems and an esprit workshop

Data Mining

2003-01-01

an overview of the multidisciplinary field of data mining this book focuses specifically on new methodologies and case studies included are case studies written by 44 leading scientists and talented young scholars from seven different countries topics covered include data mining based on rough sets the impact of missing data and mining free text for structure in addition the four basic mining operations supported by numerous mining techniques are addressed predictive model creation supported by supervised induction techniques link analysis supported by association discovery and sequence discovery techniques db segmentation supported by clustering techniques and deviation detection supported by statistical techniques

Programming Environments for Massively Parallel Distributed Systems

2013-04-17

massively parallel systems mpss with their scalable computation and storage space promises are becoming increasingly important for high performance computing the growing acceptance of mpss in academia is clearly apparent however in industrial companies their usage remains low the programming of mpss is still the big obstacle and solving this software problem is sometimes referred to as one of the most challenging tasks of the 1990 s the 1994 working conference on programming environments for massively parallel systems was the latest event of the working group wg 10 3 of the international federation for information processing ifip in this field it succeeded the 1992 conference in edinburgh on programming environments for parallel computing the research and development work discussed at the conference addresses the entire spectrum of software problems including virtual machines which are less cumbersome to program more convenient programming models advanced programming languages and especially more sophisticated programming tools but also algorithms and applications

Polyphosphazenes for Biomedical Applications

2009-07-28

brings together analyzes and contextualizes the latest findings and practical applications polyphosphazenes an emerging class of polymers include macromolecules which have been proven to be biocompatible biodegradable and bioactive their unprecedented structural diversity and unique properties make them suitable as vaccine adjuvants microencapsulating agents biodegradable materials scaffolds for tissue engineering biocompatible coatings and carriers for gene delivery polyphosphazenes for biomedical applications offers a thorough review of polyphosphazene research findings in the life sciences chemistry and chemical engineering it emphasizes biomedical applications as well as recent advances in polyphosphazene development such as high throughput discovery and the latest controlled methods of synthesis the book brings together analyzes and contextualizes a wealth of knowledge that previously could only be found scattered throughout the scientific literature following two introductory chapters the book reviews vaccine delivery and

immunomodulation biomaterials drug delivery systems biodetection well defined polyphosphazenes synthetic aspects and novel molecular architectures all the chapters have been written by leading researchers in the field editor alexander andrianov who has led the effort to commercialize polyphosphazenes for biomedical applications has carefully reviewed and edited all chapters to ensure readability accuracy and thoroughness polyphosphazenes for biomedical applications is not only intended for researchers working in polyphosphazene chemistry but also for all researchers seeking solutions to problems arising in the areas of biomaterials drug delivery systems and controlled release formulations

Handbook of Plastic Films

2003

plastic films are high performance materials which play an essential part in modern life the plastics films industry uses state of the art manufacturing processes and is continuously seeking out new technologies to improve its performance the understanding of the nature of plastic films their production techniques applications and their characterisation is essential for producing new types of plastic films this handbook has been written to discuss the production and main uses of plastic films plastic films are high performance materials which play an essential part in modern life plastic films are mostly used in packaging applications but as will be seen from this book they are also used in the agricultural medical and engineering fields the plastics films industry uses state of the art manufacturing processes and is continuously seeking out new technologies to improve its performance the understanding of the nature of plastic films their production techniques applications and their characterisation is essential for producing new types of plastic films this handbook has been written to discuss the production and main uses of plastic films

AIDS in Asia

2004-06-01

asia has become the new battle ground for the war against hiv aids the magnitude of the potential public health problems caused by aids in this populous continent may become a catastrophic disaster a 10 rate of prevalence of hiv 1 in india and china alone would mean more than 200 million people are infected with hiv aids in asia is useful as a comprehensive up to date aids reference book for public health and medical professionals this volume provides concrete information on the diagnosis treatment care prevention and impact of aids part i contains snapshots of hiv aids in asia countries and regions included in this section are thailand india china japan vietnam laos cambodia myanmar malaysia indonesia the philippines pakistan nepal sri lanka hawaii and the pacific islands hong kong and taiwan part ii addresses the molecular epidemiology of hiv aids part iii deals with the diagnosis surveillance and projected scenarios of the aids epidemic part iv outlines prevention efforts and treatment options part v provides an overview of the ongoing collaborative efforts involved in several different nations in the worldwide war against aids this volume will be invaluable to all the public health professionals and researchers working in this field the book is a useful addition to the hiv aids literature aids in asia offers a comprehensive interesting overview of the epidemic there and of general issues that will influence its progression roger detels md ms university of california los angeles the journal of the american medical association book review 293 15

Scientific and Technical Aerospace Reports

1990

algorithms and theory of computation handbook second edition in a two volume set provides an up to date compendium of fundamental computer science topics and techniques it also illustrates how the topics and techniques come together to deliver efficient solutions to important practical problems new to the second edition along with updating and revising many of the existing chapters this second edition contains more than 20 new chapters this edition now covers external memory parameterized self stabilizing and pricing algorithms as well as the theories of algorithmic coding privacy and anonymity databases computational games and communication networks it also discusses computational topology computational number theory natural language processing and grid computing and explores applications in intensity modulated radiation therapy voting dna research systems biology and financial derivatives this best selling handbook continues to help computer professionals and engineers find significant information on various algorithmic topics the expert contributors clearly define the terminology present basic results and techniques and offer a number of current references to the in depth literature they also provide a glimpse of the major research issues concerning

the relevant topics

Algorithms and Theory of Computation Handbook - 2 Volume Set

2022-05-30

this book constitutes the thoroughly refereed post conference proceedings of the 8th international conference on high performance computing for computational science vecpar 2008 held in toulouse france in june 2008 the 51 revised full papers presented together with the abstract of a surveying and look ahead talk were carefully reviewed and selected from 73 submissions the papers are organized in topical sections on parallel and distributed computing cluster and grid computing problem solving environment and data centric numerical methods linear algebra computing in geosciences and biosciences imaging and graphics computing for aerospace and engineering and high performance data management in grid environments

Energy Research Abstracts

1978

pcmag.com is a leading authority on technology delivering labs based independent reviews of the latest products and services our expert industry analysis and practical solutions help you make better buying decisions and get more from technology

High Performance Computing for Computational Science - VECPAR 2008

2008-12-16

annotation this book constitutes the refereed proceedings of the 11th international conference on high performance computing hipc 2004 held in bangalore india in december 2004 the 48 revised full papers presented were carefully reviewed and selected from 253 submissions the papers are organized in topical sections on wireless network management compilers and runtime systems high performance scientific applications peer to peer and storage systems high performance processors and routers grids and storage systems energy aware and high performance networking and distributed algorithms

Advanced Optical Data Storage

2003

infoworld is targeted to senior it professionals content is segmented into channels and topic centers infoworld also celebrates people companies and projects

NASA Tech Briefs

2002

semiannual with semiannual and annual indexes references to all scientific and technical literature coming from doe its laboratories energy centers and contractors includes all works deriving from doe other related government sponsored information and foreign nonnuclear information arranged under 39 categories e.g. biomedical sciences basic studies biomedical sciences applied studies health and safety and fusion energy entry gives bibliographical information and abstract corporate author subject report number indexes

Optics in Computing

2003

this monograph evolved from my ph d dissertation completed at the laboratory of computer science mit during the summer of 1986 in my dissertation i proposed a pipelined code mapping scheme for array operations on static dataflow architectures the main addition to this work is found in chapter 12 reflecting new research results developed during the last three years since i joined mcgill university results based upon the principles in my dissertation the terminology dataflow soft ware pipelining has been consistently used since publication of our 1988 paper on the argument fetching dataflow architecture model at mcgill university 43 in the first part of this book we describe the static data flow graph model as an operational model for concurrent computation we look at timing considerations for program graph execution on an ideal static dataflow computer examine the notion of pipe lining and characterize its performance we discuss balancing techniques used to transform certain graphs into fully pipelined data flow graphs in particular we show how optimal balancing of an acyclic data flow graph can be formulated as a linear programming problem for which an optimal solution exists as a major result we show the optimal balancing problem of acyclic data flow graphs is reduceable to a class of linear programming problem the net work flow problem for which well known efficient algorithms exist this result disproves the conjecture that such problems are computationally hard

PC Mag

1999-12-14

infoworld is targeted to senior it professionals content is segmented into channels and topic centers infoworld also celebrates people companies and projects

High Performance Computing - HiPC 2004

2004-12-06

this title provides a forum where expert insights are presented on the subject of linking three current phenomena software evolution uml and xml

InfoWorld

2000-10-02

this book presents a set of 11 papers accompanying the lectures of leading researchers given at the 7th edition of the international school on formal methods for the design of computer communication and software systems sfm 2007 held in bertinoro italy in may june 2007 sfm 2007 was devoted to formal techniques for performance evaluation and covered several aspects of the field

Energy Research Abstracts

1995

comprehensive nanoscience and technology second edition five volume set allows researchers to navigate a very diverse interdisciplinary and rapidly changing field with up to date comprehensive and authoritative coverage of every aspect of modern nanoscience and nanotechnology presents new chapters on the latest developments in the field covers topics not discussed to this degree of detail in other works such as biological devices and applications of nanotechnology compiled and written by top international authorities in the field

A Code Mapping Scheme for Dataflow Software Pipelining

2012-12-06

this book presents the thoroughly refereed post workshop proceedings of the 9th international workshop on languages and compilers for parallel computing lcpc 96 held in san jose california in august 1996 the book contains 35 carefully revised full papers together with nine poster presentations the papers are organized in topical sections on automatic data distribution and locality enhancement program analysis compiler algorithms for fine grain parallelism instruction scheduling and register allocation parallelizing compilers communication optimization compiling hpf and run time control of parallelism

InfoWorld

1994-12-19

for more than 40 years computerworld has been the leading source of technology news and information for it influencers worldwide computerworld s award winning site computerworld com twice monthly publication focused conference series and custom research form the hub of the world s largest global it media network

Financial Disclosure Report

1998

this book elucidates how cybergis that is new generation geographic information science and systems gis based on advanced computing and cyberinfrastructure transforms computation and data intensive geospatial discovery and innovation it comprehensively addresses opportunities and challenges roadmaps for research and development and major progress trends and impacts of cybergis in the era of big data the book serves as an authoritative source of information to fill the void of introducing this exciting and growing field by providing a set of representative applications and science drivers of cybergis this book demonstrates how cybergis has been advanced to enable cutting edge scientific research and innovative geospatial application development such cybergis advances are contextualized as diverse but interrelated science and technology frontiers the book also emphasizes several important social dimensions of cybergis such as for empowering deliberative civic engagement and enabling collaborative problem solving through structured participation in sum this book will be a great resource to students academics and geospatial professionals for leaning cutting edge cybergis geospatial data science high performance computing and related applications and sciences

Official Gazette of the United States Patent and Trademark Office

1999

gpu computing gems jade edition offers hands on proven techniques for general purpose gpu programming based on the successful application experiences of leading researchers and developers one of few resources available that distills the best practices of the community of cuda programmers this second edition contains 100 new material of interest across industry including finance medicine imaging engineering gaming environmental science and green computing it covers new tools and frameworks for productive gpu computing application development and provides immediate benefit to researchers developing improved programming environments for gpus divided into five sections this book explains how gpu execution is achieved with algorithm implementation techniques and approaches to data structure layout more specifically it considers three general requirements high level of parallelism coherent memory access by threads within warps and coherent control flow within warps chapters explore topics such as accelerating database searches how to leverage the fermi gpu architecture to further accelerate prefix operations and gpu implementation of hash tables there are also discussions on the state of gpu computing in interactive physics and artificial intelligence programming tools and techniques for gpu computing and the edge and node parallelism approach for computing graph centrality metrics in addition the book

proposes an alternative approach that balances computation regardless of node degree variance software engineers programmers hardware engineers and advanced students will find this book extremely useful this second volume of gpu computing gems offers 100 new material of interest across industry including finance medicine imaging engineering gaming environmental science green computing and more covers new tools and frameworks for productive gpu computing application development and offers immediate benefit to researchers developing improved programming environments for gpus even more hands on proven techniques demonstrating how general purpose gpu computing is changing scientific research distills the best practices of the community of cuda programmers each chapter provides insights and ideas as well as hands on skills applicable to a variety of fields

Software Evolution with UML and XML

2005-01-01

Formal Methods for Performance Evaluation

2007-06-06

CIO

1999-08-01

Comprehensive Nanoscience and Nanotechnology

2019-01-02

Consultants & Consulting Organizations Directory

2009-05-12

LCPC'97

1997-06-11

Transactions of the American Nuclear Society

1988

Grants and Awards for the Fiscal Year Ended ...

1981

PC Tech Journal

1987-11

Australian Official Journal of Patents

2003-08-21

U.S. Geological Survey Water-supply Paper

1982

Computerworld

1994-04-18

BioScan

2009

CyberGIS for Geospatial Discovery and Innovation

2018-06-26

Technology for Large Space Systems

1986

GPU Computing Gems Jade Edition

2011-11-02

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