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Soggetti	Software engineering Computer hardware Computer organization Algorithms Numerical analysis Computer science—Mathematics Software Engineering/Programming and Operating Systems Computer Hardware Computer Systems Organization and Communication Networks Algorithm Analysis and Problem Complexity Numeric Computing Discrete Mathematics in Computer Science
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Architecture -- Using Split Queues to Improve the Performance of Parallel Switch -- LEAP: A Data Driven Loop Engine on Array Processor -- A New Architecture of a Fast Floating-Point Multiplier -- A Highly Efficient FC-SAN Based on Load Stream -- A New High-Performance Distributed Shared I/O System -- IA64 Oriented OpenMP Compiler: Design and Implementation of Fortran Front End -- An Alternative Superscalar Architecture with Integer Execution Units Only -- A High Efficiency Distributed Mutual Exclusion Algorithm -- The Security

Architecture of the Java Operating System JX – A Security Architecture for Distributed Parallel Computing -- Simultaneous Multithreading Trace Processors -- A VLSI Architecture Design of 1-D DWT -- Overcoming Static Register Pressure for Software Pipelining in the Itanium Architecture -- Separating Data Storage, Data Computation, and Resource Management One from Another in Operating Systems -- A High Performance Design and Implementation of the Virtual Interface Architecture -- A Portable Debugger for PVM / MPI Programs on IA64 Cluster -- Optimization of Asynchronous Volume Replication Protocol -- Predicate Analysis Based on Path Information -- kd-Clos: New No-Blocking Permutation Network -- LilyTask: A Task-Oriented Parallel Computation Model -- A Method of Data Assignment on Heterogeneous Disk System -- Apply Aggregate I/O to Improve Performance of Network Storage Based on IP -- Orthogonal Design Method for Optimal Cache Configuration -- A Probabilistically Correct Election Protocol in Asynchronous Distributed Systems -- Software and Theory -- A Formal Specification and Method for MAS as a Distributed System -- Optimal Fixed Priority Assignment with Limited Priority Levels -- A Proof Assistant for Mobile Processes -- Data Space Fusion Based Approach for Effective Alignment of Computation and Data -- Optimization Parameter Selection by Means of Limited Execution and Genetic Algorithms -- Study on CORBA-Based Load Balance Algorithm -- Parallel Algorithm for Mining Maximal Frequent Patterns -- Design of Cluster Safe File System -- Graph Scaling: A Technique for Automating Program Construction and Deployment in ClusterGOP -- Pattern Classification with Parallel Processing of the Cellular Neural Networks-Based Dynamic Programming -- An Effective Molecular Algorithm for Solving the Satisfiability Problem -- Scheduling Outages in Distributed Environments -- An Improved Parallel Algorithm for Certain Toeplitz Cyclic Tridiagonal Systems on Distributed-Memory Multicomputer -- Generic Programming for Scientific Computing in C++, Java™, and C# -- A General Metric of Load Balancing in  $\infty$ -Range -- Lattice Boltzmann Simulations of Fluid Flows -- Grid and Network -- Design and Research of Strong-Mobile Agent Based Grid's Architecture -- A Cost-Based Online Scheduling Algorithm for Job Assignment on Computational Grids -- Composition and Automation of Grid Services -- Algorithmic Skeletons for Metacomputing -- Grid Services Performance Tuning in OGSA -- A Transaction Model for Grid Computing -- An Overview of Research on QoS Routing -- A Novel Model and Architecture on NMS – Dynamically Constructed Network Management -- QoS-Driven Multicast Tree Generation Using Genetic Algorithm -- A Scalable Peer-to-Peer Network with Constant Degree -- Symmetric Distributed Server Architecture for Network Management System -- A Distributed Network Management Framework Based on NGI -- Performance Evaluation of Scheme Integrating Mobile IP and NHRP over ATM Networks -- Improving Availability of P2P Storage Systems -- Research and Implementation of Dynamic Web Services Composition -- Call Admission Control for Multimedia CDMA Networks under Imperfect Power Control -- Efficient Data Consistency Schemes in 2-Tier Cellular Networks -- iHOPE: An Intelligent Handoff Protocol for Seamless Multimedia Service in Wireless Network -- Content and Cell Based Predictive Routing (CCPR) Protocol for Mobile Ad Hoc Networks -- A Multiple Access Scheme Using Split and Merge Algorithm for Contention/Reservation-Based Wireless MAC Protocols -- Applied Technologies -- Reconfigurable Cipher Processing Framework and Implementation -- A Dynamic Reconfiguration Platform Based on Distributed Component Technology CCM -- TMO-Based Object Group Framework for Supporting Distributed Object Management and Real-

Time Services -- Extendable and Interchangeable Architecture  
Description of Distributed Systems Using UML and XML -- Dynamics in Hierarchical CSCW Systems -- The Tenure Duty Method (TDM) in the Active Incident Recovery Research -- A Combined Continuous-Time/Discrete-Event Computation Model for Heterogeneous Simulation Systems -- Information Geometry on Modular and Hierarchical Neural Network -- A Novel Speed-Up Algorithm of Fractal Image Compression -- Implementation and Evaluation of a Novel Parallel SAR Imaging Method on Clustering Systems -- Shape Registration Based on Modified Chain Codes -- A Distributed Parallel Resampling Algorithm for Large Images -- Collaborative Supervision of Machine Vision Systems: Breaking a Sequential Bottleneck in the Supervised Learning Process -- Parallel Storing and Querying XML Documents Using Relational DBMS -- A Variable Consistent Server Replication Model for Mobile Database -- Multi-scheduler Concurrency Control for Parallel Database Systems -- Optimal Broadcast Channel for Data Dissemination in Mobile Database Environment -- Global System Image Architecture for Cluster Computing.

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### Sommario/riassunto

This volume contains the papers presented at the 5th International Workshop on Advanced Parallel Processing Technologies, APPT 2003. This series of workshops is designed to strengthen the cooperation between the German and Chinese institutions active in the area of these technologies. It has continued to grow, providing an excellent forum for reporting advances in parallel processing technologies. The 5th workshop itself addressed the entire gamut of related topics, ranging from the architectural aspects of parallel computer hardware and system software to the applied technologies for novel applications. For this workshop, we received over 191 full submissions from researchers all over the world. All the papers were peer-reviewed in depth and qualitatively graded on their relevance, originality, significance, presentation, and the overall appropriateness for their acceptance. Any concerns raised were discussed in the program committee. The organizing committee did an excellent job in selecting 78 papers (Among them, 21 were short ones) for presentation. In short, the papers included here represent the forefront of research from China, Germany, and the other countries.

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