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   Soggetti   Computer architecture
                       Software engineering
                       Computer organization
                       Computers
                       Algorithms
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   Nota di contenuto   Parallel computations on finite partially ordered sets -- Tight lower bounds for computing shortest paths on proper interval and bipartite permutation graphs -- Using run-time uncertainty to robustly schedule parallel computation -- A Tuple-based data structure for distributed parallel processing of 3D dynamic meshes -- The application of parallel computations technique to the solution of certain hydrodynamic stability problems -- A formal framework for the analysis of recursive-parallel programs -- Systematic design of 3-dimensional fixed-size array processors -- On proving large distributed systems: Petri net

modules verification -- Influence of self-connection weights on cellular-neural network stability -- Estimating the parallel start-up overhead for parallelizing compilers -- Parallel and distributed evolutionary computation with MANIFOLD -- Parallel computation of fractal sets with the help of neural networks and cellular automata -- On a technology of design and analysis of dataflow programs -- An integer linear programming model of software pipelining for the MIPS R8000 processor -- Computations on cellular automata with defects -- Efficient implementation of the improved unsymmetric Lanczos process on massively distributed memory computers -- A spatial grid file for multimedia data representation -- Optimization techniques and performance analysis for different serial and parallel RISC-based computers -- Analysis of a distributed election algorithm using COVERS 3.0 — A case study -- A unified software pipeline construction scheme for modulo scheduled loops -- An HPF case study of a domain-decomposition based irregular application -- Hybrid approach to task allocation in distributed systems -- Viability of multithreading on networks of workstations -- Task migration and fine grain parallelism on distributed memory architectures -- A scheme for building visual debugging environment with dynamic debugging method for parallel systems -- Control-driven coordination programming in shared dataspace -- Performance analysis of geometric modeling algorithm -- 3D visual tool supporting derivation of parallel programs for MIMD systems -- Scheduling algorithms for parallel transaction processing systems -- Communications in parallel architectures and networks of workstations: From standardisation to new standards -- A multithreaded vector co-processor -- Hardware support for 3D cellular processing -- Cellular neural-like algorithms with heuristics for solving combinatorial optimization problems -- Analysis of methods for solving large-scale non-symmetric linear systems with sparsed matrices -- Parallel simulation of non-linear phenomena with cellular automata -- Modelling of seismic waves propagation for 2D media (direct and inverse problems) -- Decomposition on a group and parallel convolution and fast Fourier transform algorithms -- Parallel implementation of symmetric alternating direction implicit methods -- Construction of composed ALT-models of cellular architectures -- Parallel computation of an unsteady compressible flow -- Parallel simulation technologies for stochastic systems -- Parallel direct algorithms for solution of sparse linear systems -- Scheduling parallel programs involving parallel database interactions -- The base module of multiprocessor system with structural-procedural organization of computing -- Bitwise processing — a paradigm for deriving parallel algorithms -- Tuning shared network cache size vs. second-level cache size in clusters-based multiprocessors -- A simple, multi-architecture, parallel procedure for generating combinations -- Processing and debugging of parallel programs on the level of task model -- Systolic modular exponentiation -- The highly parallel incomplete Gram-Schmidt preconditioner -- COVERS 3.0 — A C++ based graphical modeling and simulation tool -- Simulating cellular computations with ALT. A tutorial -- SPARTH: A family of systems for parallel high-accuracy computations.

| Sommario/riassunto | This book constitutes the refereed proceedings of the Fourth International Conference on Parallel Computing Technologies, PaCT-97, held in Yaroslavl, Russia, in September 1997. The volume presents a total of 54 contributions: 21 full papers, 20 short papers, 10 posters, and three tutorials. All papers were selected for inclusion in the proceedings from numerous submissions on the basis of three independent reviews. The volume covers all current topics in parallel |

processing; it is divided into sections on theory, software, hardware and architecture, applications, posters, and tutorials.