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Nota di contenuto	Java -- High Performance Numerical Computing in Java: Language and Compiler Issues -- Instruction Scheduling in the Presence of Java's Runtime Exceptions -- Dependence Analysis for Java -- Low-Level Transformations A -- Comprehensive Redundant Load Elimination for the IA-64 Architecture -- Minimum Register Instruction Scheduling: A New Approach for Dynamic Instruction Issue Processors -- Unroll-Based Copy Elimination for Enhanced Pipeline Scheduling -- Data Distribution -- A Linear Algebra Formulation for Optimising Replication in Data Parallel Programs -- Accurate Data and Context Management in Message-Passing Programs -- An Automatic Iteration/Data Distribution Method Based on Access Descriptors for DSMM -- High-Level Transformations -- Inter-array Data Regrouping -- Iteration Space Slicing for Locality -- A Compiler Framework for Tiling Imperfectly-

Nested Loops -- Models -- Parallel Programming with Interacting Processes -- Application of the Polytope Model to Functional Programs -- Multilingual Debugging Support for Data-Driven and Thread-Based Parallel Languages -- Array Analysis -- An Analytical Comparison of the I-Test and Omega Test -- The Access Region Test -- A Precise Fixpoint Reaching Definition Analysis for Arrays -- Demand-Driven Interprocedural Array Property Analysis -- Language Support -- Language Support for Pipelining Wavefront Computations -- The Data Mover: A Machine-Independent Abstraction for Managing Customized Data Motion -- Optimization of Memory Usage Requirement for a Class of Loops Implementing Multi-dimensional Integrals -- Compiler Design and Cost Analysis -- Compile-Time Based Performance Prediction -- Designing the Agassiz Compiler for Concurrent Multithreaded Architectures -- The Scc Compiler: SWARing at MMX and 3D Now! -- Low-Level Transformation B -- Loop Shifting for Loop Compaction -- Speculative Predication Across Arbitrary Interprocedural Control Flow -- Posters -- Porting an Ocean Code to MPI Using TSF -- A Geometric Semantics for Program Representation in the Polytope Model -- Compiler and Run-Time Support for Improving Locality in Scientific Codes -- Code Restructuring for Improving Real Time Response through Code Speed, Size Trade-offs on Limited Memory Embedded DSPs -- Compiling for Speculative Architectures -- Symbolic Analysis in the PROMIS Compiler -- Data I/O Minimization for Loops on Limited Onchip Memory Processors -- Time Skewing for Parallel Computers -- Run-Time Parallelization Optimization Techniques -- Thresholding for Work Distribution of Recursive, Multithreaded Functions -- An Empirical Study of Function Pointers Using SPEC Benchmarks -- Data Driven Graph: A Parallel Program Model for Scheduling.

Sommario/riassunto

In August 1999, the Twelfth Workshop on Languages and Compilers for P- allel Computing (LCPC) was hosted by the Hierarchical Tiling Research group from the Computer Science and Engineering Department at the University of California San Diego (UCSD). The workshop is an annual international forum for leading research groups to present their current research activities and the latest results. It has also been a place for researchers and practitioners to - teract closely and exchange ideas about future directions. Among the topics of interest to the workshop are language features, code generation, debugging, - timization, communication and distributed shared memory libraries, distributed object systems, resource management systems, integration of compiler and r- time systems, irregular and dynamic applications, and performance evaluation. In 1999, the workshop was held at the International Relations/Paci c Studies Auditorium and the San Diego Supercomputer Center at UCSD. Seventy-seven researchers from Australia, England, France, Germany, Korea, Spain, and the United States attended the workshop, an increase of over 50% from 1998.