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Soggetti	Computer science—Mathematics Discrete mathematics Numerical analysis Software engineering Algorithms Computer science Discrete Mathematics in Computer Science Mathematical Applications in Computer Science Numerical Analysis Software Engineering Theory of Computation
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Plenary -- Computational Discrete Geometry -- Exploiting Structured Sparsity in Large Scale Semidefinite Programming Problems -- Reliable and Efficient Geometric Computing -- The Sage Project: Unifying Free Mathematical Software to Create a Viable Alternative to Magma, Maple, Mathematica and MATLAB -- Computation of Special Functions (Invited) -- Sollya: An Environment for the Development of Numerical Codes -- Validated Special Functions Software -- The Dynamic Dictionary of Mathematical Functions (DDMF) -- Reliable Computing with GNU MPFR -- Computational Group Theory (Invited) -- Simplicial Cohomology of Smooth Orbifolds in GAP -- Computing Polycyclic Quotients of Finitely

(L-)Presented Groups via Groebner Bases -- Constructive Membership Testing in Black-Box Classical Groups -- Computational Group Theory (Contributed) -- Towards High-Performance Computational Algebra with GAP -- An Improvement of a Function Computing Normalizers for Permutation Groups -- A GAP Package for Computation with Coherent Configurations -- Computer Algebra (Invited) -- CoCoALib: A C++ Library for Computations in Commutative Algebra... and Beyond -- LinBox Founding Scope Allocation, Parallel Building Blocks, and Separate Compilation -- FGb: A Library for Computing Gröbner Bases -- Fast Library for Number Theory: An Introduction -- Exact Numeric Computation for Algebraic and Geometric Computation (Invited) -- Controlled Perturbation for Certified Geometric Computing with Fixed-Precision Arithmetic -- Exact Geometric and Algebraic Computations in CGAL -- On Solving Systems of Bivariate Polynomials -- Accurate and Reliable Computing in Floating-Point Arithmetic -- Exact Numeric Computation for Algebraic and Geometric Computation (Contributed) -- Deferring Dag Construction by Storing Sums of Floats Speeds-Up Exact Decision Computations Based on Expression Dags -- The Design of Core 2: A Library for Exact Numeric Computation in Geometry and Algebra -- Formal Proof (Invited) -- Introducing HOL Zero -- Euler's Polyhedron Formula in mizar -- Building a Library of Mechanized Mathematical Proofs: Why Do It? and What Is It Like to Do? -- Linear Programs for the Kepler Conjecture -- A Formal Proof of Pick's Theorem -- Formal Proof (Contributed) -- Evaluation of Automated Theorem Proving on the Mizar Mathematical Library -- Geometry and Visualization (Invited) -- On Local Deformations of Planar Quad-Meshes -- Construction of Harmonic Surfaces with Prescribed Geometry -- Geometry and Visualization (Contributed) -- A Library of OpenGL-Based Mathematical Image Filters -- MD-jeep: An Implementation of a Branch and Prune Algorithm for Distance Geometry Problems -- TADD: A Computational Framework for Data Analysis Using Discrete Morse Theory -- Groebner Bases and Applications (Invited) -- to Normaliz 2.5 -- Computer Algebra Methods in Tropical Geometry -- Groebner Bases and Applications (Contributed) -- A New Desingularization Algorithm for Binomial Varieties in Arbitrary Characteristic -- An Algorithm of Computing Inhomogeneous Differential Equations for Definite Integrals -- New Algorithms for Computing Primary Decomposition of Polynomial Ideals -- An Automated Confluence Proof for an Infinite Rewrite System Parametrized over an Integro-Differential Algebra -- Operadic Gröbner Bases: An Implementation -- Number Theoretical Software (Invited) -- Magma - A Tool for Number Theory -- Number Theoretical Software (Contributed) -- Enumerating Galois Representations in Sage -- NZMATH 1.0 -- Software for Optimization and Polyhedral Computation (Invited) -- Removing Redundant Quadratic Constraints -- Traversing Symmetric Polyhedral Fans -- C++ Tools for Exploiting Polyhedral Symmetries -- isl: An Integer Set Library for the Polyhedral Model -- Software for Optimization and Polyhedral Computation (Contributed) -- The Reformulation-Optimization Software Engine -- Generating Smooth Lattice Polytopes -- Reliable Computation (Invited) -- Mathmagix: Towards Large Scale Programming for Symbolic and Certified Numeric Computations -- Complex Inclusion Functions in the CoStLy C++ Class Library -- Standardized Interval Arithmetic and Interval Arithmetic Used in Libraries -- Reliable Computation (Contributed) -- Efficient Evaluation of Large Polynomials -- Communicating Functional Expressions from Mathematica to C-XSC.

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