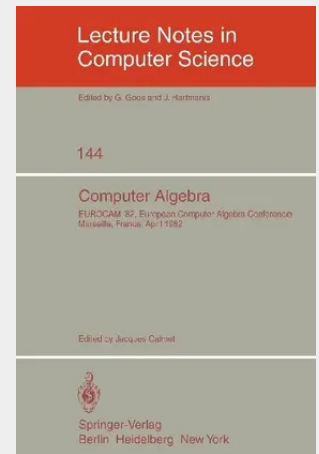


Computer Algebra

EUROCAM '82, European Computer Algebra Conference, Marseilles, France, April 5-7, 1982

Asymptotically fast algorithms for the numerical multiplication and division of polynomials with complex coefficients.- An adaptive hybrid algorithm for multiplying dense polynomials.- The construction of multivariate polynomials with preassigned zeros.- Lattices and factorization of polynomials over algebraic number fields.- Commutative algebra and computer algebra.- The nielsen reduction as key problem to polynomial algorithms in free groups.- The structure of near-rings of small order.- Computing double coset representatives for the generation of solvable groups.- On the determination of algebraic number fields of given discriminant.- Rewrite rule theory and abstract data type analysis.- Algebraic specifications: A constructive methodology in logic programming.- A theorem-proving approach to the Knuth-Bendix completion algorithm.- Solving symbolic equations with press.- Deterministic versus probabilistic factorization of integral polynomials.- On polynomial factorization.- Hacıjan's algorithm in VAXIMA: improvements and difficulties.- The parallel Risch algorithm (I).- An algorithm to compute the equations of tangent cones.- Computer algebra systems viewed by a notorious user.- Implementation of differential geometric objects and functions with an application to extended Maxwell equations.- A sum-substitutor used as trigonometric simplifier.- Transformation of an intractable problem into a tractable problem: Evaluation of a determinant in several variables.- Algebraic computation of the solution of some nonlinear differential equations.- Factorization in cylindrical algebraic decomposition ζ Abstract.- Cylindrical algebraic decomposition by quantifier elimination.- Algorithms for the computation of free lattices.- Linear algebraic approach for computing polynomial resultant.- The development of a vector-based algebra system.- Nlargeing a z80 microprocessor.- Escaping from intermediate expression swell: a continuing saga.- REDUCE ζ A case study in algebra system development.- An algorithm to obtain formal solutions of a linear homogeneous differential equation at an irregular singular point.- Symbolic numeric methods in microwave technology.- A program in REDUCE for finding explicit solutions to certain ordinary differential equations.- An application of MACSYMA to nonlinear systems decoupling.

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