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Nota di contenuto	Probability and plurality for aggregations of learning machines -- Logic programming with ions -- Inverse image analysis -- A unification algorithm for confluent theories -- On the Knuth-Bendix completion for concurrent processes -- On word problems in equational theories -- Semantics for nondeterministic asynchronous broadcast networks -- Another look at abstraction in process algebra -- A timed failures model for extended communicating processes -- Readiness semantics for regular processes with silent actions -- Verifying a protocol using relativized bisimulation -- On recent trends in formal language theory -- Non-uniform automata over groups -- Minimal automaton of a rational cover -- A star-height problem in free monoids with partial commutations -- Single-valued finite transduction -- The kleene and the Parikh Theorem in complete semirings -- An algorithm for computing asynchronous automata in the case of acyclic non-commutation graphs -- On the languages accepted by finite reversible automata -- Decision problems for regular trace languages -- Panic

mode without panic -- Computation tree logic CTL\* and path quantifiers in the monadic theory of the binary tree -- Modelchecking of CTL formulae under liveness assumptions -- A modal logic for a subclass of event structures -- Parallel 5-colouring of planar graphs -- Parallel construction of a suffix tree -- The probabilistic and deterministic parallel complexity of symmetric functions -- Term matching on parallel computers -- Guessing games and distributed computations in synchronous networks -- On the bivariate function minimization problem and its applications to motion planning -- Testing the necklace condition for Shortest Tours and optimal factors in the plane -- Nearly optimal heuristics for binary search trees with geometric generalizations -- Approximating integer lattices by lattices with cyclic factor groups -- On the complexity of graph critical uncolorability -- Posets, boolean representations and quick path searching -- The lexicographically first maximal subgraph problems: P-completeness and NC algorithms -- Uniform computational complexity of Taylor series -- Efficient on-line algorithms for the knapsack problem -- Lower bounds for sorting of sums -- The I/O complexity of sorting and related problems -- A lower bound for the complexity of the Union-Split-Find problem -- The nearest common ancestor in a dynamic tree -- A generalization of the procedure of karp and miller to well structured transition systems -- Completeness results for reachability, containment, and equivalence, with respect to conflict-free vector replacement systems -- Partial algebras flow from algebraic specifications -- The logarithmic alternation hierarchy collapses:  $AL_2=AL_2$  -- Testing membership in commutative transformation semigroups -- On the computing power of one-way cellular arrays -- Recent developments in the theory of learning.

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## Sommario/riassunto

This volume contains the proceedings of the 14th International Colloquium on Automata Languages and Programming, organized by the European Association for Theoretical Computer Science (EATCS) and held in Karlsruhe, July 13-17, 1987. The papers report on original research in theoretical computer science and cover topics such as algorithms and data structures, automata and formal languages, computability and complexity theory, semantics of programming languages, program specification, transformation and verification, theory of data bases, logic programming, theory of logical design and layout, parallel and distributed computation, theory of concurrency, symbolic and algebraic computation, term rewriting systems, cryptography, and theory of robotics. The authors are young scientists and leading experts in these areas.

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