May 11-13, 1981

THIRTEENTH ANNUAL ACM SYMPOSIUM
ON THEORY OF COMPUTING

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SIGACT Plans Symposium

The Thirteenth Annual ACM Symposium on Theory of Computing will be held May 11-13, 1981, in Milwaukee, Wisconsin, at the Phister Hotel and Tower. The Symposium is sponsored by the ACM Special Interest Group on Automata and Computability Theory, with the cooperation of the IEEE Computer Society Technical Committee on Mathematical Foundations of Computing and the University of Wisconsin, Milwaukee. Forty-three papers will be presented in areas including analysis of algorithms, automata and formal languages, computational complexity, formal semantics and proof theory, mathematical aspects of programming languages, mathematics of computation, theoretical studies of computer systems, theory of data bases and data structures, and theory of parallel and asynchronous computation. Information and registration forms can be obtained by writing to Professor W. A. Burkhard, Computer Science Division C-014, University of California, San Diego, La Jolla, CA 92093.

Proceedings will be available at the conference, or subsequently from the ACM order department.
TECHNICAL PROGRAM

The omega-Sequence Equivalence Problem for DOL Systems is Decidable
K. Culik II, T. Harju
Univ. of Waterloo, Univ. of Turku

Unique Normal Forms in Term Rewriting Systems with Repeated Variables
P. Chew
Purdue Univ.

Classes of Functions for Computing on Binary Trees
F. Hawrusik, K. N. Venkataraman, A. Yasuhara
Bell Labs at Holmdel, Rutgers Univ., Rutgers Univ.

Examples of Hard Tautologies in the Propositional Calculus
B. Krishnamurthy, R. N. Moll
Univ. of Massachusetts

Programming Language Theorems Unprovable in Very Strong Theory
D. Leivant
Cornell Univ.

Context-Free Languages, Groups, the Theory of Ends, Second-Order Logic, Tiling
Problems, Cellular Automata, and Vector Addition Systems
D. E. Muller, P. E. Schupp
Univ. of Illinois

Fast Programs for Initial Segments and Polynomial Time Computation in Weak
Models of Arithmetic
D. Joseph, P. Young
Purdue Univ.

Localized Search in Sorted Lists
S. R. Kosaraju
The Johns Hopkins Univ.

Convex Decompositions of Polyhedra
B. M. Chazelle
Carnegie-Mellon Univ.

Digital Straightness and Convexity
C. E. Kim, A. Rosenfeld
Univ. of Maryland

A Linear Probing Sort and its Analysis
G. Gonnet, J.I. Munro
Univ. of Waterloo

Lower Bounds for the Cycle Detection Problem
F. E. Fich
Univ. of California, Berkeley

Time-Space-Optimal String Matching
Z. Galil, J. Seiferas
Tel-Aviv Univ., Univ. of Rochester

A Data Structure for Dynamic Trees
D. Sleator, R.E. Tarjan
Bell Labs at Murray Hill

On the Parallel Computation for the Knapsack Problem
A.C. Yao
Stanford Univ.
A Difference in Efficiency between Synchronous and Asynchronous Systems
E. Arjomandi, M. Fischer, N. Lynch
York Univ., Univ. of Washington, Georgia Tech.

Distributed Algorithms for Synchronizing Interprocess Communication Within Real Time
J. Reif, P. Spirakis
Harvard

Reversal Complexity of Counter Machines
T-h. Chan
Univ. of Minnesota

Space-Bounded Probabilistic Turing Machine Complexity Classes are Closed under Complement
J. Simon
Pennsylvania State Univ.

A Characterization of the Class of Computable in Polynomial Time on Random Access Machines
A. Bertoni, G. Mauri, N. Sabadini
Univ. di Milano

Fooling a two-way automaton or One pushdown store is better than one counter for two-way machines
P. Duris, Z. Galil
Slovak Academy of Science, Tel-Aviv Univ.

Measures of Parallelism in Alternating Computation Trees
K. N. King
Georgia Tech.

LALR(k) Testing in PSPACE-Complete
E. Ukkonen, E. Soisalon-Soininen
Univ. of Helsinki

Bandwidth-Constrained NP-complete problems
B. Monien, I. H. Sudborough
Univ. Paderborn, Northwestern Univ.

The Complexity of Dynamic Languages and Dynamic Optimization Problems
J. Orlin
MIT

Low Level Complexity for Combinatorial Games
A. Adachi, S. Iwata, T. Kasai
IBM Japan, Sagami Inst. of Tech., Univ. of Electrocommunications in Tokyo

An Algorithm for the General Petri Net Reachability Problem
E. Mayr
MIT

An Efficient General-Purpose Parallel Computer
Z. Galil, W. J. Paul
Tel-Aviv Univ., Univ. of Bielefeld

The d-way Shuffle & Other Universal Schemes for Parallel Communication
L. G. Valiant, G. J. Brebner
Edinburgh Univ.

A Survey of New Layouts for the Shuffle-Exchange Graph
D. Kleitman, T. Leighton, M. Lepley, G. Miller
MIT

Bounds on Minimax Edge Length for Complete Binary Trees
M. S. Paterson, W. L. Ruzzo, L. Snyder
Univ. of Warwick, Univ. of Washington, Purdue Univ.
Lower Bounds for VLSI
R. J. Lipton, R. Sedgewick
Princeton Univ., Brown Univ.

The Entropic Limitations on VLSI Computations
A. C. Yao
Stanford Univ.

Optimal Wiring Between Rectangles
D. Dolev, K. Karplus, A. Siegel, A. Strong, and J. Ullman
Stanford Univ.

A New Model of Computation for VLSI
B. M. Chazelle, L. M. Monier
Carnegie-Mellon Univ.

IO Complexity: The Red-Blue Pebble Game
J.W. Hong, H.T. Kung
Carnegie-Mellon Univ.

Graphs that are almost Binary Trees
J.W. Hong, A.L. Rosenberg
Peking Municipal Computing Center, IBM T. J. Watson Research Center

Embedded Implicational Dependencies and their Inference Problem
A. K. Chandra, H. R. Lewis, J. A. Makowsky
IBM T. J. Watson Research Center, Harvard, Technion

Properties of Acyclic Database Schemes
C. Beeri, R. Fagin, D. Maier, A. Mendeilzon, J. Ullman, M. Yannakakis
Hebrew Univ., IBM San Jose, SUNY, Stonybrook, Univ. of Toronto,
Stanford Univ., Bell Labs at Murray Hill

Issues of Correctness in Database Concurrency Control by Locking
M. Yannakakis
Bell Labs at Murray Hill

On the Faithful Regular Extensions of Iterative Algebras
F. Parisi-Presicce
Univ. of Connecticut

Propositional Dynamic Logic of Looping and Converse
R. S. Street
MIT

Equations between Regular Terms and an Application to Process Logic
A. K. Chandra, J. Halpern, J. Manger, R. Parikh
IBM T. J. Watson Research Center, Harvard and MIT, MIT, Boston Univ. and MIT