

16TH ANNUAL SYMPOSIUM ON
FOUNDATIONS OF COMPUTER SCIENCE

The Sixteenth Symposium on Foundations of Computer Science, formerly the Symposium on Switching and Automata Theory, will be held on October 13-15, 1975 at the Claremont Hotel, Berkeley, California. It is sponsored by the IEEE Computer Society Technical Committee on Mathematical Foundations of Computing, in cooperation with SIGACT and the Department of Electrical Engineering and Computer Sciences of the University of California.

A block of rooms has been reserved at the Claremont, a resort hotel. Special rates are \$15.00 per day single and \$20.00 per day double. Reservations should be made directly to the hotel: The Claremont Hotel, Claremont at Ashby Avenues, Oakland/Berkeley, CA 94705 (Telephone 415-843-3000).

The Claremont provides complementary pickup service from the Oakland Airport, the Emeryville Heliport, and the Oakland Amtrack Station. The Heliport is reached by SFO helicopter from the San Francisco International Airport, and the helicopter ticket should be purchased along with the airplane ticket to San Francisco, in order to secure a discount fare.

A business meeting of the IEEE Computer Society Technical Committee on Mathematical Foundations of Computing will be held at 8:00 PM on Monday, October 13.

Fees for the conference are \$35 for IEEE members, \$45 for nonmembers, and \$30 for authors and session chairmen, with an additional \$5 after October 5. Checks should be made payable to "IEEE Foundations Symposium" and sent with name, affiliation, address, and telephone number to:

Professor Eugene L. Lawler
Department of EE and CS
Computer Science Division
591 Evans Hall
University of California
Berkeley, CA 94720

Professor Lawler can provide further information, if necessary. His phone number is 415-642-4019 or 415-642-1024.

PROGRAM

16TH SYMPOSIUM ON FOUNDATIONS OF COMPUTER SCIENCE

Monday, October 13

Session I

Chairman: I. Munro, University of Waterloo

Some Remarks on the Effect of Field of Constants on Number of Multiplications

S. Winograd, IBM Watson Research Center

The Exact Time Required to Perform Generalized Addition

R. W. Floyd, Stanford University

Polynomials with 0-1 Coefficients that are Hard to Evaluate

R. J. Lipton, Yale University

Fast Parallel Matrix Inversion Algorithms

L. Csanky, University of California at Berkeley

Parallel Computation in Graph Theory

E. Arjomandi and D. G. Corneil, University of Toronto

Synchronization and Computing Capabilities of Linear Asynchronous Structures

R. J. Lipton, Yale University, R. E. Miller, IBM Watson Research Center, and

L. Snyder, Yale University

Session II

Chairman: R. L. Constable, Cornell University

Flow of Control in the Proof Theory of Structured Programming

J. W. de Bakker, Mathematical Centre, Amsterdam

Bases for Chain-Complete Posets

G. Markowsky, B. K. Rosen, IBM Watson Research Center

Correct Computation Rules for Recursive Languages

P. J. Downey, R. Sethi, Pennsylvania State University

On Time Versus Space and Related Problems

J. E. Hopcroft and W. J. Paul, Cornell University, and L. G. Valiant,
The University of Leeds

Space Bounds for sl_a Language Recognition

J. Hartmanis, C. L. Berman, Cornell University

Tuesday, October 14

Session III

Chairman: P. C. Fischer, Pennsylvania State University

Minimean Optimality in Sorting Algorithms

I. Pohl, University of California at Santa Cruz

Preserving Order in a Forest in Less Than Logarithmic Time

P. van Emde Boas, Mathematical Institute, University of Amsterdam and
Mathematical Centre, Amsterdam

On the Complexity of Comparison Problems Using Linear Functions

A. C. Yao, Massachusetts Institute of Technology

Evaluating Relational Expressions with Dense and Sparse Arguments

T. G. Szymanski and J. D. Ullman, Princeton University

On the Decision Tree Complexity of the Shortest Path Problem

M. L. Fredman, Massachusetts Institute of Technology

An $O(n^{2.5})$ Algorithm for Maximum Matching in General Graphs

S. Even, Technion, O. Kariv, Weizman Institute of Science

Session IV

Chairman: S. B. Akers, General Electric Company

Information Theory and the Complexity of Switching Networks

N. Pippenger, IBM Watson Research Center

The Effect of Basis on Size of Boolean Expressions

V. R. Pratt, Massachusetts Institute of Technology

Economy of Description by Parsers, DPDA's, and PDA's

M. W. Geller, University of Michigan, H. B. Hunt III, Harvard University,

T. G. Szymanski, J. D. Ullman, Princeton University

An Improvement on Valiant's Decision Procedure for Equivalence of

Deterministic Finite Turn Pushdown Automata

C. Beerli, The Hebrew University of Jerusalem

A Grammatical Characterization of Exponential-Time Languages

W. C. Rounds, University of Michigan

Decidability of Equivalence, Containment, Intersection, and Separability
of Context-Free Languages

J. L. Rangel, Federal University of Rio de Janeiro,

H. B. Hunt III, Harvard University

Wednesday, October 15

Session-V

Chairman: A. V. Aho, Bell Laboratories

Closest-Point Problems

M. I. Shamos, D. J. Hoey, Yale University

An Optimal Bound for Two Dimensional Bin Packing

D. J. Kleitman, Massachusetts Institute of Technology, M. M. Krieger,
University of California at Los Angeles

Computational Complexity of Decision Procedures for Polynomials

L. Adleman, K. Manders, University of California at Berkeley

An Application of Graph Coloring to Printed Circuit Testing

M. R. Garey, D. S. Johnson, H. C. So, Bell Laboratories

On the Complexity of Timetable and Multi-Commodity Flow Problems

S. Even, Technion, A. Itai, A. Shamir, Weizmann Institute of Science