



IEEE TRANSACTIONS ON

# COMPUTERS

OCTOBER 1972

VOLUME C-21

NUMBER 10

A PUBLICATION OF THE IEEE COMPUTER SOCIETY



RESEARCH LIBRARY  
MERCELES  
Technical Information Division  
SEP 28 1972

CONTRIBUTIONS

*Computer Systems*

An Adaptive Replacement Algorithm for Paged-Memory Computer Systems . . . . .	<i>J. M. Thorington, Jr., and J. D. Irwin</i>	1053
The Design of Multipoint Linkages in a Teleprocessing Tree Network. . . . .	<i>K. M. Chandy and R. A. Russell</i>	1062

*Iterative Arrays*

Multidimensional Linear Iterative Circuits—General Properties. . . . .	<i>D. D. Givone and R. P. Roesser</i>	1067
A Class of Autonomous One-Dimensional Iterative Arrays of Linear Machines. . . . .	<i>A. Iosupovicz and M.-K. Hu</i>	1073

*Switching Theory*

Minimum Two-Level Threshold Gate Realizations. . . . .	<i>B. D. Carroll and C. L. Coates, Jr.</i>	1086
The Synthesis of Minimal Hazardless TANT Networks. . . . .	<i>J. Frackowiak</i>	1099

SHORT NOTES

*Automata Theory*

On Complete Systems and Finite Automata. . . . .	<i>A. T. Pu</i>	1109
--	-----------------	------

*Hybrid Computers*

A Versatile Multiplying Digital-to-Analog Converter. . . . .	<i>N. Thechanamoorthy and J. B. Plant</i>	1113
--	---	------

*Iterative Arrays*

A Cellular Permuter Array. . . . .	<i>S. Bandyopadhyay, S. Basu, and A. K. Choudhury</i>	1116
------------------------------------	---	------

*Probabilistic Machines*

Additive Bernoulli Noise Linear Sequential Circuits. . . . .	<i>H. N. El-Ghoroury and S. C. Gupta</i>	1119
--	--	------

*Sequential Machines*

Modular Networks and Nondeterministic Sequential Machines. . . . .	<i>J. D. Ullman and P. Weiner</i>	1124
--	-----------------------------------	------

*Switching Theory*

An Iterative Technique for Determining the Minimal Number of Variables for a Totally Symmetric Function with Repeated Variables. . . . .	<i>R. C. Born</i>	1129
--	-------------------	------

(Contents continued on back cover)

(Contents continued from front cover)

---

CONTRIBUTORS.....	1132
-------------------	------

---

BOOK REVIEWS	
B72-17 Computer Analysis of Circuits—D. J. Comer.....	<i>Reviewed by E. M. Rips</i> 1133
B72-18 Computers and Their Uses, 2nd ed.—W. H. Desmond.....	<i>Reviewed by E. C. Joseph</i> 1135
B72-19 Future Developments in Telecommunications—J. Martin.....	<i>Reviewed by J. E. Cox</i> 1135
B72-20 Computers in Business—An Introduction, 2nd ed.—D. H. Sanders.....	<i>Reviewed by H. C. Lucas, Jr.</i> 1136

---

ABSTRACTS OF CURRENT COMPUTER LITERATURE.....	1137
---	------

---