

PROCEEDINGS

8th SYMPOSIUM on

COMPUTER ARITHMETIC

Editors:
Mary Jane Irwin
Renato Stefanelli

May 19-21, 1987
Villa Olmo
Como, Italy

Sponsored by:
④ The Computer Society of the IEEE
Technical Committee on Computer Architecture
Technical Committee on VLSI
IEEE North Italy Section
Pennsylvania State University
Politecnico di Milano

Computer Society Order Number 774
Library of Congress Number 86-83317
IEEE Catalog Number 87CH2419-0
ISBN 0-8186-0774-2
SAN 264-620X

The papers appearing in this book comprise the proceedings of the meeting mentioned on the cover and title page. They reflect the authors' opinions and are published as presented and without change, in the interests of timely dissemination. Their inclusion in this publication does not necessarily constitute endorsement by the editors, Computer Society Press of the IEEE, or The Institute of Electrical and Electronics Engineers, Inc.

Published by Computer Society Press of the IEEE
1730 Massachusetts Avenue, N.W.
Washington, D.C. 20036-1903

Cover designed by Jack I. Ballestero

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limits of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 29 Congress Street, Salem, MA 01970. Instructors are permitted to photocopy isolated articles for noncommercial classroom use without fee. For other copying, reprint or republication permission, write to Director, Publishing Services, IEEE, 345 E. 47th St., New York, NY 10017. All rights reserved. Copyright 1987 by The Institute of Electrical and Electronics Engineers, Inc.

Computer Society Order Number 774
Library of Congress Number 86-83317
IEEE Catalog Number 87CH2419-0
ISBN 0-8186-0774-2 (Paper)
ISBN 0-8186-4774-4 (Microfiche)
ISBN 0-8186-8774-6 (Case)
SAN 264-620X

Order from: Computer Society of the IEEE	IEEE Service Center	Computer Society of the IEEE
Post Office Box 80452	445 Hoes Lane	Avenue de la Tanche, 2
Worldway Postal Center	P.O. Box 1331	B-1160 Brussels
Los Angeles, CA 90080	Piscataway, NJ 08855-1331	BELGIUM



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Conference Committee

General Chairman:

Luigi Dadda, *Politecnico di Milano*, ITALY

Program Co-Chairmen:

Mary Jane Irwin, *The Pennsylvania State University*, USA

Renato Stefanelli, *Politecnico di Milano*, ITALY

Vice Chairman:

Maria Giovanna Sami, *Politecnico di Milano*, ITALY

Program Committee:

D. P. Agrawal, *North Carolina State University*, USA

Hideo Aiso, *Keio University*, JAPAN

Dan Atkins, *University of Michigan*, USA

Algirdas Avizienis, *University of California, Los Angeles*, USA

Jesse Barlow, *The Pennsylvania State University*, USA

Jim Cody, *Argonne National Laboratory*, USA

John Eldon, *TRW*, USA

Milos Ercegovac, *University of California, Los Angeles*, USA

Silvano Giorcelli, *University of Torino*, ITALY

Thomas Hull, *University of Toronto*, CANADA

Kai Hwang, *University of Southern California*, USA

Peter Kornerup, *Aarhus University*, DENMARK

Ulrich Kulisch, *University of Karlsruhe*, W. GERMANY

David Matula, *Southern Methodist University*, USA

Fabio Rocca, *Politecnico di Milano*, ITALY

George Taylor, *MIPS*, USA

Bob Woo, *SuperChips Corp.*, USA