Lecture Notes in Computer Science

Edited by G. Goos and J. Hartmanis

208

Computation Theory

Fifth Symposium, Zaborów, Poland
December 3–8, 1984
Proceedings

Edited by Andrzej Skowron

Springer-Verlag
Berlin Heidelberg New York Tokyo

Editorial Board

D. Barstow W. Brauer P. Brinch Hansen D. Gries D. Luckham
C. Moler A. Pnueli G. Seegmüller J. Stoer N. Wirth

Editor

Andrzej Skowron
Institute of Mathematics, University of Warsaw, PKiN 9th floor
00-901 Warsaw, Poland

CR Subject Classifications (1985): F.1.1, F.2, F.3, F.4, G.2.1, G.2.2, I.2.4, I.2.6

ISBN 3-540-16066-3 Springer-Verlag Berlin Heidelberg New York Tokyo
ISBN 0-387-16066-3 Springer-Verlag New York Heidelberg Berlin Tokyo

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically those of translation, reprinting, re-use of illustrations, broadcasting, reproduction by photocopying machine or similar means, and storage in data banks. Under § 54 of the German Copyright Law where copies are made for other than private use, a fee is payable to "Verwertungsgesellschaft Wort", Munich.

© by Springer-Verlag Berlin Heidelberg 1985
Printed in Germany

Printing and binding: Beltz Offsetdruck, Hemsbach/Bergstr.
2145/3140-543210

This volume contains papers accepted for presentation at the Symposium on Computation Theory, Zaborów (near Warsaw), December 3-8, 1984.

This was the fifth symposium in the series organized within the framework of the scientific cooperation between the Humboldt-University of Berlin and Warsaw University.

The program committee of the 5th SCT consisted of: D. Burkhard, Z. Pawlak, A. Pettorossi, H. Rasiowa (chairman), D. Skordev, A. Skowron, P. Starke, H. Thiele, D. Vakerelov, M. Venturini-Zilli.

The symposium included the following topics: programming languages, theory of concurrency, automata theory, logics of programs, complexity theory, computability theory, artificial intelligence.

We appreciate the valuable contributions of all authors, the work done by the referees and organizers of the symposium.

Warsaw, July 1985

Andrzej Skowron

CONTENTS

K. Bothe
An algorithmic interface structure for Pascal compilers 1

L. Budach, B. Graw
Nonuniform complexity classes, decision graphs and homological properties of posets 7

H.D. Burkhard
On the control of concurrent systems by restrictions of the state behaviour 14

B.S. Chlebus
From domino tilings to a new model of computation 24

R. Danecki
Nondeterministic Propositional Dynamic Logic with intersection is decidable 34

K. Diks
A note on selection networks 54

A.G. Dragalin
Correctness of inconsistent theories with notions of feasibility 58

M. Ejsmont
On the log-space reducibility among array languages 80

M. Grabowski
Non-uniformity of dynamic logic 91

Z. Habasiński
Model theory of propositional logics of programs. Some open problems 98

J.W. Jaromczyk
Some results on decision trees with relations to computational trees 111

R. Knast
Propositional calculi of term satisfiability and process logics 118

W. Kowalczyk
On the effectiveness of some operations on algorithms 127

M. Krause, H. Langmaack, A. Kreczmar, M. Warpechowski
Concatenation of program modules. An algebraic approach to the semantic and implementation problems 134

A.W. Mostowski
Regular expressions for infinite trees and a standard form of automata 157

D. Niwiński
Equational μ-calculus 169

E. Orłowska
A logic of indiscernibility relations 177

Z. Pawlak
Rough sets and decision tables 187

Z. Pawlak
On learning - a rough set approach 197

A. Pettorossi, A. Skowron
A methodology for improving parallel programs by adding communications 228

S. Radev
Extension of PDL and consequence relations 251

Z. Raś, M. Zemankova-Leech
Rough-sets based learning systems 265

H. Rasiowa
Theories of interacting stacks 276

H. Rasiowa, A. Skowron
Rough concepts logic 288

C.M. Rauszer
An equivalence between indiscernibility relations in information systems and a fragment of intuitionistic logic 298

W. Rytter
On the recognition of context-free languages 318

D. Skordev
On multi-valued homomorphisms 326

P. Starke
Traces and semiwords 332

Z. Suraj
Deadlock prediction in linear systems 350

T. Tinchev, D. Vakarelov
Propositional dynamic logics with counters and stacks 364

M. Venturini Zilli
Transition graphs semantics and languages 375

J. Warpechowska
On the implementation of CSP mechanisms in LOGLAN 385