

Lecture Notes in Computer Science

Edited by G. Goos and J. Hartmanis

100

Graphtheoretic Concepts in Computer Science

Proceedings of the International
Workshop WG 80
Bad Honnef, June 15–18, 1980

FB Mathematik TUD



58344281

Edited by Hartmut Noltemeier



Fachbereich Mathematik
Technische Hochschule Darmstadt
Bibliothek

Inv.-Nr. B 18723

Springer-Verlag
Berlin Heidelberg New York 1981

CONTENTS

<i>H. Maurer</i>	
THE POST-OFFICE PROBLEM AND RELATED QUESTIONS	1
<i>H. Nishio</i>	
SERIES OF GRAPHS GENERATED BY RATIONAL MACHINES	20
<i>K.-U. Witt</i>	
ON LINEARIZING GRAPHS	32
<i>H.J. Schneider</i>	
SET-THEORETIC CONCEPTS IN PROGRAMMING LANGUAGES AND THEIR IMPLEMENTATION	42
<i>M. Nagl</i>	
GRAPH REWRITING AND AUTOMATIC, MACHINE-INDEPENDENT PROGRAM OPTIMIZATION	55
<i>H.J. Ludwigs</i>	
PROPERTIES OF ORDERED GRAPH GRAMMARS	70
<i>J.L. Bentley/Th. Ottmann</i>	
THE POWER OF A ONE-DIMENSIONAL VECTOR OF PROCESSORS	80
<i>K. Mehlhorn</i>	
A NEW DATA STRUCTURE FOR REPRESENTING SORTED LISTS	90
<i>G. Tinhofer</i>	
ON THE USE OF SOME ALMOST SURE GRAPH PROPERTIES	113
<i>H. Noltemeier</i>	
ON A GENERALIZATION OF HEAPS	127
<i>M. Schnitzler</i>	
GRAPH GRAMMARS AND THE COMPLEXITY GAP IN THE ISOMORPHISM PROBLEM FOR ACYCLIC DIGRAPHS	137
<i>A.L. Rosenberg</i>	
ISSUES IN THE STUDY OF GRAPH EMBEDDINGS	150

<i>C. Batini/ A. D'Atri</i>	
SCHEMA HYPERGRAPHS: A FORMALISM TO INVESTIGATE LOGICAL DATA BASE DESIGN	177
<i>P. Kandzia/ M. Mangelmann</i>	
THE USE OF TRANSITIVELY IRREDUCIBLE KERNELS OF FULL FAMILIES OF FUNCTIONAL DEPENDENCIES IN LOGICAL DATA BASE DESIGN	195
<i>G. Ausiello/ A. D'Atri/ D. Saccà</i>	
GRAPH ALGORITHMS FOR THE SYNTHESIS AND MANIPULATION OF DATA BASE SCHEMES	212
<i>Th. Ottmann/ H.-W. Six/ D. Wood</i>	
THE ANALYSIS OF SEARCH TREES; A SURVEY	234
<i>H.-W. Six</i>	
A FRAMEWORK FOR DATA STRUCTURES	250
<i>G. Schmidt</i>	
INVESTIGATING PROGRAMS IN TERMS OF PARTIAL GRAPHS	268
<i>S. Even/ Y. Yacobi</i>	
AN OBSERVATION CONCERNING THE COMPLEXITY OF PROBLEMS WITH FEW SOLUTIONS AND ITS APPLICATION TO CRYPTO- GRAPHY	270
<i>B. Monien/ I.H. Sudborough</i>	
BOUNDING THE BANDWIDTH OF NP-COMPLETE PROBLEMS	279
<i>I.H. Sudborough</i>	
THE COMPLEXITY OF PATH PROBLEMS IN GRAPHS AND PATH SYSTEMS OF BOUNDED BANDWIDTH	293
<i>H.-J. Kreowski</i>	
A COMPARISON BETWEEN PETRI-NETS AND GRAPH GRAMMARS	306
<i>W. Reisig</i>	
A GRAPH GRAMMAR REPRESENTATION OF NONSEQUENTIAL PROCESSES	318

<i>J. Perl/ J. Ebert</i> REACHABILITY HOMOMORPHISMS ON NETS	326
<i>B. Mahr</i> A BIRD'S-EYE VIEW TO PATH PROBLEMS	335
<i>P. Brucker</i> THE CHINESE POSTMAN PROBLEM FOR MIXED GRAPHS	354
<i>O. Vornberger</i> ALTERNATING CYCLE COVERS AND PATHS	367
<i>P. Läuchli</i> GENERATING ALL PLANAR 0-, 1-, 2-, 3-CONNECTED GRAPHS	379
<i>H. Hamacher</i> OPTIMAL (s, t) -CUTS	383
<i>U. Derigs</i> F-FACTORS, PERFECT MATCHINGS AND RELATED CONCEPTS	388