

Table of Contents

Algebraic Specifications

- The Common Framework Initiative for Algebraic Specification and Development of Software (*Invited Talk*) 1
 D. Sannella

- A Logical Approach to Specification of Hybrid Systems 10
 M. V. Korovina, O. V. Kudinov

Specifications with States

- Algebraic Imperative Specifications (*Invited Talk*) 17
 M.-C. Gaudel, A. Zamulin

- Enhanced Control Flow Graphs in Montages 40
 M. Anlauff, Ph. W. Kutter, A. Pierantonio

- Abstract State Machines for the Composition of Architectural Styles 54
 A. Sünbul

Partial Evaluation and Supercompilation

- The Essence of Program Transformation by Partial Evaluation and Driving (*Invited Talk*) 62
 N. D. Jones

- Binding-Time Analysis in Partial Evaluation: One Size Does *Not* Fit All .. 80
 N. H. Christensen, R. Glück, S. Laursen

- Abstraction-Based Partial Deduction for Solving Inverse Problems —
A Transformational Approach to Software Verification 93
 R. Glück, M. Leuschel

- Sonic Partial Deduction 101
 J. Martin, M. Leuschel

- On Perfect Supercompilation 113
 J. P. Secher, M. H. Sørensen

- Linear Time Self-Interpretation of the Pure Lambda Calculus 128
 T. Æ. Mogensen

- An Optimal Algorithm for Purging Regular Schemes 143
 D. L. Uvarov

Polymorphism in OBJ-P	149
<i>M. Plümicke</i>	

Concurrency and Parallelism

Formal Modelling of Services for Getting a Better Understanding of the Feature Interaction Problem (<i>Invited Talk</i>)	155
<i>P. Gibson, D. Méry</i>	

Serializability Preserving Extensions of Concurrency Control Protocols	180
<i>D. Chklaev, J. Hooman, P. van der Stok</i>	

Platform Independent Approach for Detecting Shared Memory Parallelism	194
<i>Yu. V. Chelomin</i>	

Hierarchical Cause-Effect Structures	198
<i>A. P. Ustimenko</i>	

Some Decidability Results for Nested Petri Nets	208
<i>I. A. Lomazova, Ph. Schnoebelen</i>	

Abstract Structures for Communication between Processes	221
<i>G. Ciobanu, E. F. Olariu</i>	

Logic and Processes

Applying Temporal Logic to Analysis of Behavior of Cooperating Logic Programs	228
<i>M. I. Dekhtyar, A. Ja. Dikovsky, M. K. Valiev</i>	

On Semantics and Correctness of Reactive Rule-Based Programs	235
<i>M. Lin, J. Malec, S. Nadjm-Tehrani</i>	

Compositional Verification of CCS Processes	247
<i>M. Dam, D. Gurov</i>	

Compositional Style of Programming FPGAs	257
<i>E. Trichina</i>	

Languages and Software

Using Experiments to Build a Body of Knowledge (<i>Invited Talk</i>)	265
<i>V. Basili, F. Shull, F. Lanubile</i>	

Patterns in Words versus Patterns in Trees: A Brief Survey and New Results	283
<i>G. Kucherov, M. Rusinowitch</i>	

- Extensions: A Technique for Structuring Functional-Logic Programs 297
R. Caballero, F. J. López-Fraguas

- Language Tools and Programming Systems in Educational Informatics 311
S. S. Kobilov

Database Programming

- Current Directions in Hyper-Programming (*Invited Talk*) 316
*R. Morrison, R. C. H. Connor, Q. I. Cutts, A. Dearle, A. Farkas,
 G. N. C. Kirby, R. McGettrick, E. Zirintsis*

- Integration of Different Commit/Isolation Protocols in CSCW Systems
 with Shared Data 341
L. Frank

- A General Object-Oriented Model for Spatial Data 352
S. Asgari, N. Yonezaki

Object-Oriented Programming

- Twin — A Design Pattern for Modeling Multiple Inheritance 358
H. Mössenböck

- A Partial Semantics for Object Data Models with Static Binding 370
K. Lellahi, R. Souah

- Heterogeneous, Nested STL Containers in C++ 383
V. Simonis, R. Weiss

- Data Flow Analysis of Java Programs in the Presence of Exceptions 389
V. I. Shelekhov, S. V. Kuksenko

- Late Adaptation of Method Invocation Semantics 396
M. Hof

Constraint Programming

- A Control Language for Designing Constraint Solvers 402
C. Castro, E. Monfroy

- An Algorithm to Compute Inner Approximations of Relations for Interval
 Constraints 416
F. Benhamou, F. Goualard, É. Languénou, M. Christie

- Constraint Programming Techniques for Solving Problems on Graphs 424
V. Sidorov, V. Telerman, D. Ushakov

- Extensional Set Library for ECLⁱPS^e 434
T. Yakhno, E. Petrov

Model & Program Checking

Introducing Mutual Exclusion in Esterel	445
<i>K. Schneider, V. Sabelfeld</i>	
Experiences with the Application of Symbolic Model Checking to the Analysis of Software Specifications	460
<i>R. J. Anderson, P. Beame, W. Chan, D. Notkin</i>	
Formal Verification of a Compiler Back-End Generic Checker Program	470
<i>A. Dold, V. Vialard</i>	
Construction of Verified Compiler Front-Ends with Program-Checking	481
<i>A. Heberle, Th. Gaul, W. Goerigk, G. Goos, W. Zimmermann</i>	
Translating SA/RT Models to Synchronous Reactive Systems: An Approximation to Modular Verification Using the SMV Model Checker	493
<i>C. de la Riva, J. Tuya, J. R. de Diego</i>	

Artificial Intelligence

Multi-agent Optimal Path Planning for Mobile Robots in Environment with Obstacles	503
<i>F. A. Kolushev, A. A. Bogdanov</i>	
Approach to Understanding Weather Forecast Telegrams with Agent-Based Technique	511
<i>I. S. Kononenko, I. G. Popov, Yu. A. Zagorulko</i>	
Approach to Development of a System for Speech Interaction with an Intelligent Robot	517
<i>G. B. Cheblakov, F. G. Dinenberg, D. Ya. Levin, I. G. Popov, Yu. A. Zagorulko</i>	
Analysis of Sign Languages: A Step Towards Multi-lingual Machine Translation for Sign Languages	530
<i>S. Herath, Ch. Saito, A. Herath</i>	
Author Index	539



<http://www.springer.com/978-3-540-67102-2>

Perspectives of System Informatics
Third International Andrei Ershov Memorial Conference,
PSI'99, Akademgorodok, Novosibirsk, Russia, July 6-9,
1999 Proceedings
Bjorner, D.; Broy, M.; Zamulin, A.V. (Eds.)
2000, XII, 540 p. 179 illus., 3 illus. in color., Softcover
ISBN: 978-3-540-67102-2