Table of Contents

Keynote Plenary Talk 1

Reconciling Two Views of Cryptography
(The Computational Soundness of Formal Encryption) 3
Martín Abadi, Phillip Rogaway

Keynote Plenary Talk 2

Theory and Construction of Molecular Computers 23
Masami Hagiya

Keynote Plenary Talk 3

List Decoding: Algorithms and Applications 25
Madhu Sudan

Track (1) on Algorithms, Complexity and Models of Computation

Session 1.1

Approximation Algorithms for String Folding Problems 45
Giancarlo Mauri, Giulio Pavesi

An Index for Two Dimensional String Matching Allowing Rotations 59
Kimmo Fredriksson, Gonzalo Navarro, Esko Ukkonen

Session 1.2

Parallel Edge Coloring of a Tree on a Mesh Connected Computer 76
Chang-Sung Jeong, Sung-Up Cho, Sun-Chul Whang, Mi-Young Choi

Parallel Approximation Algorithms for Maximum Weighted Matching in
General Graphs 84
Ryuhei Uehara, Zhi-Zhong Chen

Invited Talk 1.1

It Is on the Boundary: Complexity Considerations for Polynomial Ideals . . 99
Ernst W. Mayr

Session 1.3

An Efficient Parallel Algorithm for Scheduling Interval Ordered Tasks 100
Yoojin Chung, Kunsoo Park, Hyuk-Chul Kwon

Task Distributions on Multiprocessor Systems 112
Evgeny V. Shchepin, Nodari N. Vakhania

Fast Interpolation Using Kohonen Self-Organizing Neural Networks 126
Olivier Sarzeaud, Yann Stéphan

Steganography Using Modern Arts
(Extended Abstract) 140
Carlo Blundo, Clemente Galdi

Session 1.4

Trade-Offs between Density and Robustness in Random Interconnection
Graphs 152
Philippe Flajolet, Kostas Hatzis, Sotiris Nikoletseas, Paul Spirakis

The $(\sigma + 1)$-Edge-Connectivity Augmentation Problem without Creating
Multiple Edges of a Graph 169
Satoshi Taoka, Toshimasa Watanabe

On the Hardness of Approximating Some NP-optimization Problems
Related to Minimum Linear Ordering Problem
(Extended Abstract) 186
Sounaka Mishra, Kripasindhu Sikdar

Maximum Clique and Minimum Clique Partition in Visibility Graphs 200
Stephan Eidenbenz, Christoph Stamm

Session 1.5

Real-Time Language Recognition by Alternating Cellular Automata 213
Thomas Buchholz, Andreas Klein, Martin Kutrib

Damage Spreading and μ-Sensitivity on Cellular Automata 226
Bruno Martin

Invited Talk 1.2

Discrepancy Theory and Its Application to Finance 243
Shu Tezuka

Session 1.6

Fully Consistent Extensions of Partially Defined Boolean Functions with
Missing Bits 257
Endre Boros, Toshihide Ibaraki, Kazuhisa Makino

Characterization of Optimal Key Set Protocols
(Extended Abstract) 273
Takaaki Mizuki, Hiroki Shizuya, Takao Nishizeki

On the Complexity of Integer Programming in the Blum-Shub-Smale Computational Model 286
Valentin E. Brimkov, Stefan S. Dantchev

On Logarithmic Simulated Annealing 301
Andreas Albrecht, Chak-Kuen Wong

Invited Talk 1.3

Hierarchical State Machines 315
Mihalis Yannakakis

Track (2) on Logic, Semantics, Sepecification, and Verification

Session 2.1

Ambient Groups and Mobility Types 333
Luca Cardelli, Giorgio Ghelli, Andrew D. Gordon

An Asynchronous, Distributed Implementation of Mobile Ambients 348
Cédric Fournet, Jean-Jacques Lévy, Alan Schmitt

Invited Talk 2.1

Type Systems for Concurrent Processes: From Deadlock-Freedom to Livelock-Freedom, Time-Boundedness 365
Naoki Kobayashi

Session 2.2

Local π-Calculus at Work: Mobile Objects as Mobile Processes 390
Massimo Merro, Josva Kleist, Uwe Nestmann

An Interpretation of Typed Concurrent Objects in the Blue Calculus 409
Silvano Dal Zilio

Session 2.3

A Higher-Order Specification of the π-Calculus 425
Joëlle Despeyroux

Open Ended Systems, Dynamic Bisimulation and Tile Logic 440
Roberto Bruni, Ugo Montanari, Vladimiro Sassone

Fibred Models of Processes: Discrete, Continuous, and Hybrid Systems (Extended Abstract) 457
Marcelo P. Fiore

On the Complexity of Bisimulation Problems for Pushdown Automata . . . 474
Richard Mayr

Session 2.4

A Type-Theoretic Study on Partial Continuations 489
Yukiyoshi Kameyama

Partially Typed Terms between Church-Style and Curry-Style 505
Ken-Etsu Fujita, Aleksy Schubert

Alternating Automata and Logics over Infinite Words
(Extended Abstract) 521
Christof Löding, Wolfgang Thomas

Hypothesis Support for Information Integration in Four-Valued Logics 536
Yann Loyer, Nicolas Spyratos, Daniel Stamate

Invited Talk 2.2

Masaccio: A Formal Model for Embedded Components 549
Thomas A. Henzinger

Session 2.5

A Single Complete Refinement Rule for Demonic Specifications 564
Karl Lermer, Paul Strooper

Reasoning about Composition Using Property Transformers and Their
Conjugates 580
Michel Charpentier, K. Mani Chandy

Invited Talk 2.3

Some New Directions in the Syntax and Semantics of Formal Languages . . 596
Gordon D. Plotkin

Panel Discussion on New Challenges for TCS

New Challenges for Theoretical Computer Science
(General Introduction to the Panel) 599
Jozef Gruska

Algorithm Design Challenges
(Position Statement) 602
Giorgio Ausiello

Quantumization of Theoretical Informatics
(Position Statement) 604
Jozef Gruska

Two Problems in Wide Area Network Programming
(Position Statement) 609
Ugo Montanari

New Challenges for Computational Models
(Position Statement) 612
Yoshihito Toyama

Towards a Computational Theory of Everything
(Position Statement) 614
Jiří Wiedermann

Open Lectures

On the Power of Interactive Computing 619
Jan van Leeuwen, Jiří Wiedermann

The Varieties of Programming Language Semantics
(Summary) 624
Peter D. Mosses

Author Index 629

Springer

http://www.springer.com/978-3-540-67823-6

Theoretical Computer Science: Exploring New Frontiers of Theoretical Informatics
International Conference IFIP TCS 2000 Sendai, Japan, August 17-19, 2000 Proceedings
Leeuwen, J. van; Watanabe, O.; Hagiya, M.; Mosses, P.D.; Ito, T. (Eds.)

2000, XVI, 636 p., Softcover
ISBN: 978-3-540-67823-6