

Table of Contents

Invited Talk

Bidding on Configurations in Internet Ad Auctions	1
<i>S. Muthukrishnan</i>	

1 Algorithmic Game Theory and Coding Theory

An Attacker-Defender Game for Honeynets	7
<i>Jin-Yi Cai, Vinod Yegneswaran, Chris Alfeld, and Paul Barford</i>	
On the Performances of Nash Equilibria in Isolation Games	17
<i>Vittorio Bilò, Michele Flammini, Gianpiero Monaco, and Luca Moscardelli</i>	
Limits to List Decoding Random Codes	27
<i>Atri Rudra</i>	

2 Algorithms and Data Structures

Algorithm for Finding k -Vertex Out-trees and Its Application to k -Internal Out-branching Problem	37
<i>Nathann Cohen, Fedor V. Fomin, Gregory Gutin, Eun Jung Kim, Saket Saurabh, and Anders Yeo</i>	
A $(4n - 4)$ -Bit Representation of a Rectangular Drawing or Floorplan	47
<i>Toshihiko Takahashi, Ryo Fujimaki, and Youhei Inoue</i>	
Relationship between Approximability and Request Structures in the Minimum Certificate Dispersal Problem	56
<i>Tomoko Izumi, Taisuke Izumi, Hirotaka Ono, and Koichi Wada</i>	

3 Graph Drawing

Coordinate Assignment for Cyclic Level Graphs	66
<i>Christian Bachmaier, Franz J. Brandenburg, Wolfgang Brunner, and Raymund Fülöp</i>	
Crossing-Optimal Acyclic HP-Completion for Outerplanar st -Digraphs	76
<i>Tamara Mchedlidze and Antonios Symvonis</i>	

Edge-Intersection Graphs of k -Bend Paths in Grids	86
<i>Therese Biedl and Michal Stern</i>	

4 Algorithms and Data Structures

Efficient Data Structures for the Orthogonal Range Successor Problem	96
<i>Chih-Chiang Yu, Wing-Kai Hon, and Bing-Feng Wang</i>	
Reconstruction of Interval Graphs	106
<i>Masashi Kiyomi, Toshiki Saitoh, and Ryuhei Uehara</i>	
A Fast Algorithm for Computing a Nearly Equitable Edge Coloring with Balanced Conditions	116
<i>Akiyoshi Shioura and Mutsunori Yagiura</i>	

5 Cryptography and Security

Minimal Assumptions and Round Complexity for Concurrent Zero-Knowledge in the Bare Public-Key Model	127
<i>Giovanni Di Crescenzo</i>	
Efficient Non-interactive Range Proof	138
<i>Tsz Hon Yuen, Qiong Huang, Yi Mu, Willy Susilo, Duncan S. Wong, and Guomin Yang</i>	
Approximation Algorithms for Key Management in Secure Multicast ...	148
<i>Agnes Chan, Rajmohan Rajaraman, Zhifeng Sun, and Feng Zhu</i>	

6 Algorithms

On Smoothed Analysis of Quicksort and Hoare's Find	158
<i>Mahmoud Fouz, Manfred Kufleitner, Bodo Manthey, and Nima Zeini Jahromi</i>	
On an Online Traveling Repairman Problem with Flowtimes: Worst-Case and Average-Case Analysis	168
<i>Axel Simroth and Alexander Souza</i>	
Three New Algorithms for Regular Language Enumeration	178
<i>Margareta Ackerman and Erkki Mäkinen</i>	

7 Computational Geometry

Convex Partitions with 2-Edge Connected Dual Graphs	192
<i>Marwan Al-Jubei, Michael Hoffmann, Mashhood Ishaque, Diane L. Souvaine, and Csaba D. Tóth</i>	

The Closest Pair Problem under the Hamming Metric	205
<i>Kerui Min, Ming-Yang Kao, and Hong Zhu</i>	
Space Efficient Multi-dimensional Range Reporting	215
<i>Marek Karpinski and Yakov Nekrich</i>	

8 Approximation Algorithms

Approximation Algorithms for a Network Design Problem	225
<i>Binay Bhattacharya, Yuzhuang Hu, and Qiaosheng Shi</i>	
An FPTAS for the Minimum Total Weighted Tardiness Problem with a Fixed Number of Distinct Due Dates	238
<i>George Karakostas, Stavros G. Kolliopoulos, and Jing Wang</i>	
On the Hardness and Approximability of Planar Biconnectivity Augmentation	249
<i>Carsten Gutwenger, Petra Mutzel, and Bernd Zey</i>	

9 Computational Biology and Bioinformatics

Determination of Glycan Structure from Tandem Mass Spectra	258
<i>Sebastian Böcker, Birte Kehr, and Florian Rasche</i>	
On the Generalised Character Compatibility Problem for Non-branching Character Trees	268
<i>Ján Maňuch, Murray Patterson, and Arvind Gupta</i>	
Inferring Peptide Composition from Molecular Formulas	277
<i>Sebastian Böcker and Anton Pervukhin</i>	
Optimal Transitions for Targeted Protein Quantification: Best Conditioned Submatrix Selection	287
<i>Rastislav Šrámek, Bernd Fischer, Elias Vicari, and Peter Widmayer</i>	
Computing Bond Types in Molecule Graphs	297
<i>Sebastian Böcker, Quang B.A. Bui, Patrick Seeber, and Anke Truss</i>	

10 Sampling and Learning

On the Diaconis-Gangolli Markov Chain for Sampling Contingency Tables with Cell-Bounded Entries	307
<i>Ivona Bezáková, Nayantara Bhatnagar, and Dana Randall</i>	
Finding a Level Ideal of a Poset	317
<i>Shuji Kijima and Toshio Nemoto</i>	

A Polynomial-Time Perfect Sampler for the Q-Ising with a Vertex-Independent Noise	328
<i>M. Yamamoto, S. Kijima, and Y. Matsui</i>	
Extracting Computational Entropy and Learning Noisy Linear Functions	338
<i>Chia-Jung Lee, Chi-Jen Lu, and Shi-Chun Tsai</i>	
HITS Can Converge Slowly, but Not Too Slowly, in Score and Rank	348
<i>Enoch Peserico and Luca Pretto</i>	
11 Algorithms	
Online Tree Node Assignment with Resource Augmentation	358
<i>Joseph Wun-Tat Chan, Francis Y.L. Chin, Hing-Fung Ting, and Yong Zhang</i>	
Why Locally-Fair Maximal Flows in Client-Server Networks Perform Well	368
<i>Kenneth A. Berman and Chad Yoshikawa</i>	
On Finding Small 2-Generating Sets	378
<i>Isabelle Fagnot, Guillaume Fertin, and Stéphane Vialette</i>	
Convex Recoloring Revisited: Complexity and Exact Algorithms	388
<i>Iyad A. Kanj and Dieter Kratsch</i>	
Strongly Chordal and Chordal Bipartite Graphs Are Sandwich Monotone	398
<i>Pinar Heggernes, Federico Mancini, Charis Papadopoulos, and R. Sritharan</i>	
12 Complexity and Computability	
Hierarchies and Characterizations of Stateless Multicounter Machines ...	408
<i>Oscar H. Ibarra and Ömer Eğecioğlu</i>	
Efficient Universal Quantum Circuits	418
<i>Debajyoti Bera, Stephen Fenner, Frederic Green, and Steve Homer</i>	
An Improved Time-Space Lower Bound for Tautologies	429
<i>Scott Diehl, Dieter van Melkebeek, and Ryan Williams</i>	
13 Probabilistic Analysis	
Multiple Round Random Ball Placement: Power of Second Chance	439
<i>Xiang-Yang Li, Yajun Wang, and Wangsen Feng</i>	

The Weighted Coupon Collector's Problem and Applications	449
<i>Petra Berenbrink and Thomas Sauerwald</i>	
Sublinear-Time Algorithms for Tournament Graphs	459
<i>Stefan Dantchev, Tom Friedetzky, and Lars Nagel</i>	

14 Complexity and Computability

Classification of a Class of Counting Problems Using Holographic Reductions	472
<i>Michael Kowalczyk</i>	
Separating NE from Some Nonuniform Nondeterministic Complexity Classes	486
<i>Bin Fu, Angsheng Li, and Liyu Zhang</i>	
On the Readability of Monotone Boolean Formulae	496
<i>Khaled Elbassioni, Kazuhisa Makino, and Imran Rauf</i>	

15 Algorithms and Data Structures

Popular Matchings: Structure and Algorithms	506
<i>Eric McDermid and Robert W. Irving</i>	
Graph-Based Data Clustering with Overlaps	516
<i>Michael R. Fellows, Jiong Guo, Christian Komusiewicz, Rolf Niedermeier, and Johannes Uhlmann</i>	
Directional Geometric Routing on Mobile Ad Hoc Networks	527
<i>Kazushige Sato and Takeshi Tokuyama</i>	
Author Index	539