

ALGO 2001 Program

Monday August 27	Tuesday August 28	Wednesday August 29	Thursday August 30	Friday August 31
Registration	Registration			
Invited	Invited	Invited	Invited	ESA 16 WABI 9
Coffee	ESA 1 WAE 1	ESA 5 WAE 3	ESA 9 WAE 5 WABI P1	ESA 13 WABI 7
ARACNE 1	Coffee	Coffee	Coffee	Coffee
	ESA 2 WAE 2	ESA 6 WAE 4	ESA 10 WAE 6 WABI P2	ESA 14 WABI 8
Lunch	Lunch	Lunch	Lunch	Lunch
Invited	Invited	Invited	Invited	ESA 15
Coffee	ESA 3 WABI 1	ESA 7 WABI 3	ESA 11	WABI 5
	Coffee	Coffee	Coffee	
ARACNE 2	ESA 4 WABI 2	ESA 8 WABI 4	ESA 12	WABI 6
Registration		Concert hall reception	Business meeting Conference dinner	

Monday August 27

- 08:00 Registration *In front of Auditorium F*
- 09:00 ARACNE 2001 opening remarks *Auditorium F*
- 09:05 **Invited presentation: Berthold Vöcking** *Auditorium F*
Multiple-Choice Algorithms
- 09:55 Coffee break

ARACNE Session 1	Auditorium F
10:20 <i>Dynamic Bandwidth Allocation: Lower Bounds on Latency for a Class of Randomized Single Servers</i> Sotiris Nikolettseas and Paul Spirakis	
10:45 <i>The Cost of Lack of Coordination in Distributed Network Routing</i> Marios Mavronicolas, Antonis Mouskos, and Paul Spirakis	
11:10 <i>Efficient Management of Transient Station Failures in Linear Radio Communication Networks with Bases</i> Carlo Gaibisso, Guido Proietti, and Richard Tan	
11:35 <i>Optimal Gossiping on CCCs of Even Dimension</i> Jop F. Sibeyn and Michal Soch	

- 12:00 Lunch
- 14:15 **Invited presentation: Stefano Leonardi** *Auditorium F*
Non-clairvoyant scheduling to minimize the average flow time
- 15:05 Coffee break

ARACNE Session 2	Auditorium F
15:30 <i>Hamiltonian cycles in faulty random geometric networks</i> Jordi Petit	
15:55 <i>Wavelength assignment problem in all-optical rings revisited</i> Luciano Margara	
16:20 <i>Better Alternatives to OSPF Routing</i> Jessica H. Fong, Anna C. Gilbert, Sampath Kannan, and Martin J. Strauss	

- 17:30 Registration and Gettogether *Coffee lounge, Building 540*
-21:00

Tuesday August 28

- 08:00 Registration *In front of Auditorium F*
- 09:00 Welcome *Auditorium E*
- 09:05 **Invited presentation: Lars Arge** *Auditorium E*
External memory data structures

ESA Session 1: Caching and Prefetching	Auditorium F
10:00 <i>Strongly Competitive Algorithms for Caching with Pipelined Prefetching</i> Alexander Gaysinsky, Alon Itai, and Hadas Shachnai	
10:25 <i>Duality Between Prefetching and Queued Writing with Parallel Disks</i> David A. Hutchinson, Peter Sanders, and Jeffrey Scott Vitter	

WAE Session 1	Auditorium G1
10:00 <i>Compact DFA Representation for Fast Regular Expression Search</i> Gonzalo Navarro and Mathieu Raffinot	
10:25 <i>The max-shift algorithm for approximate string matching</i> – Cancelled Costas S. Iliopoulos, Laurent Mouchard, and Yoan J. Pinzon	

10:50 Coffee break

ESA Session 2: Online Algorithms	Auditorium F
11:15 <i>Online Bin-Coloring</i> Sven Oliver Krumke, Willem de Paepe, Joerg Rambau, and Leen Stougie	
11:40 <i>A General Decomposition Theorem for the k-Server Problem</i> Steve Seiden	
12:05 <i>Buying a constant competitive ratio for paging</i> J. Csirik, C. Imreh, J. Noga, S. Seiden, and G.J. Woeginger	

WAE Session 2	Auditorium G1
11:15 <i>Fractal Matrix Multiplication: a Case Study on Portability of Cache Performance</i> Gianfranco Bilardi, Paolo D'Alberto, and Alexandru Nicolau	
11:40 <i>Experiences with the design and implementation of space-efficient deques</i> Jyrki Katajainen and Bjarke Buur Mortensen	
12:05 <i>Designing and implementing a general purpose halfedge data structure</i> Hervé Brönnimann	

12:30 Lunch

Invited presentation: Jotun Hein	Auditorium E
<i>Algorithms for Statistical Multiple Alignment</i>	

ESA Session 3: Data Structures I	Auditorium F
15:00 <i>Simple minimal perfect hashing in less space</i> Martin Dietzfelbinger and Torben Hagerup	
15:25 <i>Cuckoo Hashing</i> Rasmus Pagh and Flemming Friche Rodler	

WABI Session 1: Alignment	Auditorium G1
15:00 <i>An improved model for statistical alignment</i> I. Miklos and Z. Toroczka	
15:25 <i>Improving profile-profile alignments via log average scoring</i> N. von Oehsen and R. Zimmer	

15:50 Coffee break

ESA Session 4: Optimization and Approximation	Auditorium F
16:15 <i>Coupling Variable Fixing Algorithms for the Automatic Recording Problem</i> Meinolf Sellmann and Torsten Fahle	
16:40 <i>Approximation algorithms for scheduling malleable tasks under precedence constraints</i> R. Lepere, D. Trystram, and G.J. Woeginger	
17:05 <i>On the Approximability of the Minimum Test Collection Problem</i> B.V. Halldorsson, M.M. Halldorsson, and R. Ravi	

WABI Session 2: Genetic mapping	Auditorium G1
16:15 <i>False positives in genomic map assembly and sequence validation</i> T. Anantharaman and B. Mishra	
16:40 <i>Boosting EM for radiation hybrid and genetic mapping</i> – Cancelled T. Schiex, P. Chabrier, M. Bouchez, and D. Milan	
16:40 <i>Comparing assemblies using fragments and mate-pairs</i> D.H. Huson, A.L. Halpern, Z. Lai, E.W. Myers, K. Reinert, and G.G. Sutton	
17:05 <i>Placing probes along the genome using pairwise distance data</i> W. Casey, B. Mishra, and M. Wigler	

Wednesday August 29

Invited presentation: Susanne Albers	Auditorium E
<i>Some algorithmic problems in large networks</i>	

ESA Session 5: Sequences	Auditorium F
10:00 <i>Finding approximate repetitions under Hamming distance</i> Roman Kolpakov and Gregory Kucherov	
10:25 <i>SNPs Problems, Complexity and Algorithms</i> Giuseppe Lancia, Vineet Bafna, Sorin Istrail, Ross Lippert, and Russell Schwartz	

WAE Session 3	Auditorium G1
10:00 <i>Optimised Predecessor Data Structures for Internal Memory</i> Naïla Rahman, Richard Cole, and Rajeev Raman	
10:25 <i>An Adaptable and Extensible Geometry Kernel</i> Susan Hert, Michael Hoffmann, Lutz Kettner, Sylvain Pion, and Michael Seel	

10:50 Coffee break

ESA Session 6: Scheduling	Auditorium F
11:15 <i>A FPTAS for approximating the unrelated parallel machines scheduling problem with costs</i> E. Angel, E. Bampis, and A. Kononov	
11:40 <i>Grouping techniques for scheduling problems: simpler and faster</i> Alekssei V. Fishkin, Klaus Jansen, and Monaldo Mastrolilli	
12:05 <i>A 2-approximation algorithm for the multi-vehicle scheduling problem on a path with release and handling times</i> Y. Karuno and H. Nagamochi	

WAE Session 4	Auditorium G1
11:15 <i>Efficient Resource Allocation with Noisy Functions</i> Arne Andersson, Per Carlsson, and Fredrik Ygge	
11:40 <i>Improving the efficiency of Branch and Bound Algorithms for the Simple Plant Location Problem</i> Boris Goldengorin, Diptesh Ghosh, and Gerard Sierksma	
12:05 <i>Exploiting Partial Knowledge of Satisfying Assignments</i> Kazuo Iwama and Suguru Tamaki	

12:30 Lunch

Invited presentation: Uri Zwick	Auditorium E
<i>Bio-Geometric Modeling</i>	

ESA Session 7: Shortest Paths	Auditorium F
15:00 <i>A Simple Shortest Path Algorithm with Linear Average Time</i> Andrew V. Goldberg	
15:25 <i>A Heuristic for Dijkstra's Algorithm with Many Targets and its Use in Weighted Matching Algorithms</i> Kurt Mehlhorn and Guido Schaefer	

WABI Session 3: Statistical models	<i>Auditorium G1</i>
<i>15:00 Comparing stochastic models</i> A. Jagota, R.B. Lyngso, and C.N.S. Pedersen	
<i>15:25 Assessing the statistical significance of overrepresented oligonucleotides</i> A. Denise, M. Regnier, and M. Vandenberg	

15:50 Coffee break

ESA Session 8: Geometry I	<i>Auditorium F</i>
<i>16:15 A Separation Bound for Real Algebraic Expressions</i> Christoph Burnikel, Stefan Funke, Kurt Mehlhorn, Stefan Schirra, and Susanne Schmitt	
<i>16:40 Property Testing with Geometric Queries</i> Artur Czumaj and Christian Sohler	
<i>17:05 Smallest Color-Spanning Objects</i> Manuel Abellanas, Ferran Hurtado, Christian Icking, Rolf Klein, Elmar Langetepe, Lihong Ma, Belen Palop, and Vera Sacristan	

WABI Session 4: Protein structure	<i>Auditorium G1</i>
<i>16:15 Pattern matching and pattern discovery algorithms for protein topologies</i> J. Viksna and D. Gilbert	
<i>16:40 Computing linking numbers of a filtration</i> H. Edelsbrunner and A. Zomorodian	
<i>17:05 Side chain-positioning as an integer programming problem</i> O. Eriksson, Y. Zhou, and A. Elofsson	

18:30 Concert hall reception

Thursday August 30

<i>09:00 Invited presentation: Herbert Edelsbrunner</i>	<i>Auditorium E</i>
<i>Exact and approximate distances in graphs</i>	

ESA Session 9: Data Structures II	<i>Auditorium F</i>
<i>10:00 Explicit Deterministic Constructions for Membership in the Bitprobe Model</i> Jaikumar Radhakrishnan, Venkatesh Raman, and S. Srinivasa Rao	
<i>10:25 Lossy Dictionaries</i> Rasmus Pagh and Flemming Friche Rodler	

WAE Session 5	<i>Auditorium G1</i>
<i>10:00 Using PRAM Algorithms on a Uniform-Memory-Access Shared-Memory Architecture</i> David A. Bader, Ajith K. Illendula, and Bernard M.E. Moret	
<i>10:25 An Experimental Study of Data Migration Algorithms</i> Eric Anderson, Joe Hall, Jason D. Hartline, Michael Hobbs, Anna Karlin, Jared Saia, Ram Swaminathan, and John Wilkes	

<i>10:00–10:50 WABI Poster Session 1</i>	<i>Auditorium G2</i>
<i>10:50 Coffee break</i>	

ESA Session 10: Geometry II	<i>Auditorium F</i>
<i>11:15 Splitting a Delaunay triangulation in linear time</i> Bernard Chazelle, Olivier Devillers, Ferran Hurtado, Merce Mora, Vera Sacristan, and Monique Teillaud	
<i>11:40 A fast algorithm for approximating the detour of a polygonal chain</i> Annette Ebbers-Baumann, Rolf Klein, Elmar Langetepe, and Andrzej Lingas	
<i>12:05 An Approximation Algorithm for Minimum Convex Cover with Logarithmic Performance Guarantee</i> Stephan Eidenbenz and Peter Widmayer	

WAE Session 6	<i>Auditorium G1</i>
<i>11:15 An Experimental Study of Basic Communication Protocols in Ad-hoc Mobile Networks</i> Ioannis Chatzigiannakis, Sotiris Nikolettseas, Nearchos Paspallis, Paul Spirakis, and Christos Zaroliagis	
<i>11:40 Experimental Analysis of Algorithms for Bilateral-Contract Clearing Mechanisms Arising in Deregulated Power Industry</i> Chris Barrett, Doug Cook, Vance Faber, Gregory Hicks, Achla Marathe, Madhav Marathe, Aravind Srinivasan, Yoram J. Sussmann, and Heidi Thornquist	
<i>12:05 Pareto Shortest Paths is Often Feasible in Practice</i> Matthias Mueller-Hannemann and Karsten Weihe	

<i>11:15–12:30 WABI Poster Session 2</i>	<i>Auditorium G2</i>
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<i>12:30 Lunch</i>	
<i>14:00 Invited presentation: Andrei Broder</i>	<i>Auditorium E</i>
<i>Some algorithmic challenges in web search</i>	

ESA Session 11: Distributed Algorithms	<i>Auditorium F</i>
<i>15:00 Distributed $O(\Delta \log n)$-edge-coloring algorithm</i> A. Czygrinow, M. Hanckowiak, and M. Karonski	
<i>15:25 Modeling Replica Placement in a Distributed File System: Narrowing the Gap between Analysis and Simulation</i> John Douceur and Roger Wattenhofer	

WABI Session 5: Phylogeny	<i>Auditorium G1</i>
<i>15:00 A chemical-distance-based test for positive Darwinian selection</i> T. Pupko, R. Sharan, M. Hasegawa, R. Shamir, and D. Graur	
<i>15:25 Finding the maximum compatible tree for a bounded number of trees with bounded degree is solvable in polynomial time</i> Ganeshkumar G. and T. Warnow	

15:50 Coffee break

ESA Session 12: Graph Algorithms	<i>Auditorium F</i>
<i>16:15 Computing Cycle Covers without Short Cycles</i> Markus Blaeser and Bodo Siebert	
<i>16:40 A polynomial time algorithm for the cutwidth of bounded degree graphs with small treewidth</i> Dimitrios M. Thilikos, Maria Serna, and Hans L. Bodlaender	
<i>17:05 Lower Bounds and Exact Algorithms for the Graph Partitioning Problem using Multicommodity Flows</i> Norbert Sensen	

WABI Session 6: Gene order	<i>Auditorium G1</i>
<i>16:15 Experiments in computing sequences of reversals</i> A. Bergeron and F. Strasbourg	
<i>16:40 Improving the accuracy of evolutionary distances between genomes</i> L.-S. Wang	
<i>17:05 Finding an optimal inversion median: experimental results</i> A. Siepel and B.M.E. Moret	

<i>17:30 Business meeting</i>	<i>Auditorium F</i>
<i>19:00 Conference dinner</i>	<i>Mathematical canteen</i>

Friday August 31

ESA Session 16: Graphs	<i>Auditorium E</i>
<i>09:00 A General Model of Undirected Web Graphs</i> Colin Cooper and Alan Frieze	
<i>09:25 Packing Cycles and Cuts in Undirected Graphs</i> Alberto Caprara, Alessandro Panconesi, and Romeo Rizzi	

WABI Session 9: Sequence analysis	<i>Auditorium G1</i>
<i>09:00 Determination of the binding amino acids based on random peptide array screening data</i> P.J. van der Veen, L.F.A. Wessels, J.W. Sloostra, R.H. Meloen, M.J.T. Reinders, and J. Hellendoorn	
<i>09:25 A simple hypergeometric approach for discovering putative transcription factor binding sites</i> Y. Barash, G. Bejerano, and N. Friedman	

09:50 Break

ESA Session 13: Pricing	<i>Auditorium E</i>
<i>10:00 Fast Pricing of European Asian Options with Provable Accuracy: Single-stock and Basket Options</i> Karhan Akcoglu, Ming-Yang Kao, and Shuba V. Raghavan	
<i>10:25 Competitive Auctions for Multiple Digital Goods</i> Andrew V. Goldberg and Jason D. Hartline	

WABI Session 7: Phylogeny	<i>Auditorium G1</i>
<i>10:00 MLMC trees and Hadamard conjugation</i> B. Chor, M. Hendy, and D. Penny	
<i>10:25 The performance of phylogenetic methods on trees of bounded diameter</i> L. Nakhleh, U. Roshan, K. St.John, J. Sun, and T. Warnow	

10:50 Coffee break

ESA Session 14: Broadcasting and Multicasting	<i>Auditorium E</i>
<i>11:15 Algorithms for Efficient Filtering in Content-Based Multicast</i> Stefan Langerman, Sachin Lodha, and Rahul Shah	
<i>11:40 Approximation Algorithms for Minimum-Time Broadcast under the Vertex-Disjoint Paths Mode</i> Pierre Fraigniaud	
<i>12:05 Round Robin is Optimal for Fault-Tolerant Broadcasting on Wireless Networks</i> A. Clementi, A. Monti, and R. Silvestri	

WABI Session 8: Gene order	<i>Auditorium G1</i>
<i>11:15 $(1+e)$-approximation of sorting by reversals and transpositions</i> N. Eriksen	
<i>11:40 On the practical solution of the reversal median problem</i> A. Caprara	
<i>12:05 Algorithms for finding gene clusters</i> S. Heber and J. Stoye	

12:30 Lunch

ESA Session 15: Graph Labeling and Graph Drawing	<i>Auditorium G1</i>
<i>14:00 On-line and Off-line distance constrained labeling of disk graphs</i> Jiri Fiala, Aleksei V. Fishkin, and Fedor V. Fomin	
<i>14:25 Approximate Distance Labeling Schemes</i> C. Gavoille, M. Katz, N. Katz, C. Paul, and D. Peleg	
<i>14:50 On the Parameterized Complexity of Layered Graph Drawing</i> V. Dujmovic, M. Fellows, M. Hallett, M. Kitching, G. Liotta, C. McCartin, N. Nishimura, P. Ragde, F. Rosamond, M. Suderman, S. Whitesides, and D. R. Wood	
<i>15:15 Greedy algorithms for minimisation problems in random regular graphs</i> Michele Zito	