

Conference Programme 6-10 September 2010

ALGO 2010



UNIVERSITY OF
LIVERPOOL

Conference Reception (Liverpool Anglican Cathedral)
SUNDAY 5 September 2010, 18:30-20:00

ALGO 2010
ESA/WABI schedule
MONDAY 6 Sept 2010

8:30 - 9:00	Morning coffee		
9:00 - 9:50	Invited talk: Herbert Edelsbrunner <i>Chair: Mark de Berg</i> (Grace Suite GS 1 & 2) The Robustness of Level Sets		
10:00 - 10:20	Coffee break		
10:20 - 12:00	Session 1a (ESA) <i>Chair: Prudence Wong</i> (GS 1)	Session 1b (ESA) <i>Chair: Sergio Cabello</i> (GS 2)	Session 1c (WABI) <i>Chair: Mona Singh</i> (GS 3)
	Solving an Avionics Real-Time Scheduling Problem by Advanced IP-Methods F. Eisenbrand, K. Kesavan, R. Mattikalli, M. Niemeier, A. Nordsieck, M. Skutella, J. Verschae and A. Wiese	Balancing Degree, Diameter and Weight in Euclidean Spanners S. Solomon and M. Elkin	Improved Orientations of Physical Networks I. Gamzu, D. Segev and R. Sharan
	Non-clairvoyant Speed Scaling for Weighted Flow Time S.-H. Chan, T.-W. Lam and L.-K. Lee	Testing Euclidean Spanners F. Hellweg, M. Schmidt and C. Sohler	Enumerating Chemical Organisations in Consistent Metabolic Networks: Complexity and Algorithms A. Marchetti-Spaccamela, M.-F. Sagot, L. Stougie and V. Lacroix
	A Robust PTAS for Machine Covering and Packing M. Skutella and J. Verschae	f-Sensitivity Distance Oracles and Routing Schemes S. Chechik, M. Langberg, L. Roditty and D. Peleg	Efficient Subgraph Frequency Estimation with G-Tries P. Ribeiro and F. Silva
	Constructing the R^* consensus tree of two trees in subcubic time J. Jansson and W.-K. Sung	Identification of Rare Cell Populations in Comparative Flow Cytometry A. Azad, J. Langguth, Y. Fang, A. Qi and A. Pothen	
12:00 - 13:30	Lunch		
13:30 - 14:45	Session 2a (ESA) <i>Chair: Mikko Koivisto</i> (GS 1)	Session 2b (ESA) <i>Chair: Khaled Elbassioni</i> (GS 2)	Session 2c (WABI) <i>Chair: Teresa Przytycka</i> (GS 3)
	Fast Minor Testing in Planar Graphs I. Adler, F. Dorn, F.V. Fomin, I. Sau and D. Thilikos	Communication Complexity of Quasirandom Rumor Spreading P. Berenbrink, R. Elsässer and T. Sauerwald	Sparsification of RNA Structure Prediction Including Pseudoknots M. Mohl, R. Salari, S. Will, R. Backofen and S.C. Sahinalp
	On the Number of Spanning Trees a Planar Graph Can Have K. Buchin and A. Schulz	A complete characterization of group-strategy proof mechanisms of cost-sharing E. Pountourakis and A. Vidali	Prediction of RNA secondary structure including kissing hairpin motifs C. Theis, S. Janssen and R. Giegerich
	Contractions of planar graphs in polynomial time M. Kaminski, D. Paulusma and D. Thilikos	Contribution Games in Social Networks E. Anshelevich and M. Hoefer	Reducing the Worst Case Running Time of a Family of RNA and CFG Problems, Using Valiant's Approach S. Zakov D. Tsur and M. Ziv-Ukelson
14:45 - 15:05	Break		
15:05 - 16:20	Session 3a (ESA) <i>Chair: Kevin Buchin</i> (GS 1)	Session 3b (ESA) <i>Chair: Russell Martin</i> (GS 2)	Session 3c (WABI) <i>Chair: Louxin Zhang</i> (GS 3)
	Improved Bounds for Online Stochastic Matching B. Bahmani and M. Kapralov	Superselectors: Efficient Constructions and Applications F. Cicalese and U. Vaccaro	A worst-case and practical speedup for the RNA co-folding problem using the Four-Russians idea Y. Frid and D. Gusfield
	Online Stochastic Packing applied to Display Ad Allocation J. Feldman, M. Henzinger, N. Korula, V. Mirrokni and C. Stein	Estimating the Average of a Lipschitz-Continuous Function from One Sample A. Das and D. Kempe	Sparse Estimation For Structural Variability R. Hosur, R. Singh and B. Berger
	Caching is Hard Even in the Fault Model M. Chrobak, G. Woeginger, K. Makino and H. Xu	Streaming Graph Computations with a Helpful Advisor J. Thaler, G. Cormode and M. Mitzenmacher	Effective Algorithms for Fusion Gene Detection D. He and E. Eskin
16:20 - 16:40	Coffee break		
16:40 - 17:55	Session 4a (ESA) <i>Chair: Dan Halperin</i> (GS 1)	Session 4b (ESA) <i>Chair: Ulrich Meyer</i> (GS 2)	Session 4c (WABI) <i>Chair: Bernard Moret</i> (GS 3)
	Approximation Algorithms for Dominating Set in Disk Graphs M. Gibson and I. Pirwani	n-Level Graph Partitioning V. Osipov and P. Sanders	Reconstruction of Ancestral Genome subject to Whole Genome Duplication, Speciation, Rearrangement and Loss D. Bertrand, Y. Gagnon, M. Blanchette and N. El-Mabrouk
	Minimum Vertex Cover in Rectangle Graphs R. Bar-Yehuda, D. Hermelin and D. Rawitz	Fast Routing in Very Large Public Transportation Networks Using Transfer Patterns H. Bast, E. Carlsson, A. Eigenwillig, R. Geisberger, C. Harrelson, V. Raychev and F. Viger	Genomic distance with DCJ and indels M.D.V. Braga, E. Willing and J. Stoye
	Feedback Vertex Sets in Tournaments S. Gaspers and M. Mnich	Finding the Diameter in Large Graphs: Experimentally turning a lower bound into an upper bound P. Crescenzi, R. Grossi, C. Imbrenda, L. LANZI and A. Marino	Listing All Sorting Reversals in Quadratic Time K.M. Swenson, G. Badr and D. Sankoff
18:15 - 19:30	ESA business meeting (GS 1 & 2)		WABI Poster Session (GS 3)

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ESA/WABI schedule
TUESDAY 7 Sept 2010

8:30 - 9:00	Morning coffee		
9:00 - 9:50	Invited talk: Eran Halperin <i>Chair: Mona Singh</i> (Grace Suite GS 1 & 2) Deciphering the Genetic Components of Human Diseases		
10:00 - 10:20	Coffee break		
10:20 - 12:00	Session 5a (ESA) <i>Chair: Thomas Erlebach</i> (GS 1)	Session 5b (ESA) <i>Chair: Sylvain Pion</i> (GS 2)	Session 5c (WABI) <i>Chair: Ion Mandoiu</i> (GS 3)
	Budgeted Red-Blue Median and its Generalizations M. Hajiaghayi, R. Khandekar and G. Kortsarz	Cloning Voronoi Diagrams via Retroactive Data Structures M. Dickerson, D. Eppstein and M. Goodrich	Fixed-Parameter Algorithm for Haplotype Inferences on General Pedigrees with Small Number of Sites D.D. Doan and P.A. Evans
	All Ternary Permutation Constraint Satisfaction Problems Parameterized Above Average Have Polynomial Kernels G. Gutin, L. van Iersel, M. Mnich and A.Yeo	A Unified Approach to Approximate Proximity Searching S. Arya, G. da Fonseca and D. Mount	Haplotypes versus Genotypes on Pedigrees B. Kirkpatrick
	Strong formulations for the Multi-module PESP and a quadratic algorithm for Graphical Diophantine Equation Systems L. Galli and S. Stiller	Spatio-temporal Range Searching Over Compressed Kinetic Sensor Data S. Friedler and D. Mount	An Efficient Method for DNA-based Species Assignment via Gene Tree and Species Tree Reconciliation L. Zhang and Y. Cui
	Robust Algorithms for Sorting Railway Cars C. Büsing and J. Maue	Constructing the Exact Voronoi Diagram of Arbitrary Lines in Three-Dimensional Space with Fast Point-Location M. Hemmer, O. Setter and D. Halperin	Discovering kinship through small subsets D.G. Brown and T. Berger-Wolf
12:00 - 13:30	Lunch		
13:30 - 14:20	Invited talk: Artur Czumaj <i>Chair: Leszek Gasieniec</i> (GS 1 & 2) Local Graph Exploration and Fast Property Testing		
14:20 - 14:40	Break		
14:40 - 16:20	Session 6a (ESA) <i>Chair: Gerth Brodal</i> (GS 1)	Session 6b (ESA) <i>Chair: Anita Schöbel</i> (GS 2)	Session 6c (WABI) <i>Chair: Nadia El Mabrouk</i> (GS 3)
	A Fully Compressed Algorithm for Computing the Edit Distance of Run-Length Encoded Strings K.-Y. Chen and K.-M. Chao	Median Trajectories K. Buchin, M. Buchin, M. van Kreveld, M. Löffler, R. Silveira, C. Wenk and L. Wiratma	Accuracy Guarantees for Phylogeny Reconstruction Algorithms Based on Balanced Minimum Evolution M. Bordewich and R. Mihaescu
	Fast Prefix Search in Little Space D. Belazzougui, P. Boldi, R. Pagh and S. Vigna	Optimal cover of points by disks in a simple polygon H. Kaplan, M. J. Katz, G. Morgenstern and M. Sharir	The Complexity of Inferring a Minimally Resolved Phylogenetic Supertree J. Jansson, R.S. Lemence and A. Lingas
	On the Huffman and Alphabetic Tree Problem with General Cost Functions H. Fujiwara and T. Jacobs	Stability of eps-Kernels P. Agarwal, J. Phillips and H. Yu	Reducing Multi-State to Binary Perfect Phylogeny with Applications to Missing, Removable, Inserted, and Deleted Data K. Stevens and D. Gusfield
	Medium-Space Algorithms for Inverse BWT J. Kärkkäinen and S. Puglisi	The Geodesic Diameter of Polygonal Domains S.W. Bae, M. Korman and Y. Okamoto	Improving supertree estimation using Quartets MaxCut M.S. Swenson, R. Suri, R. Linder and T. Warnow
16:20 - 16:40	Coffee break		
16:40 - 17:55	Session 7a (ESA) <i>Chair: Rob van Stee</i> (GS 1)	Session 7b (ESA) <i>Chair: Sergio Cabello</i> (GS 2)	Session 7c (WABI) <i>Chair: Magnus Bordewich</i> (GS 3)
	Polyhedral and algorithmic Properties of Quantified Linear Programs U. Lorenz, A. Martin and J. Wolf	Algorithmic Meta-theorems for Restrictions of Treewidth M. Lampis	Fast mapping and precise alignment of AB SOLiD color reads to reference DNA M. Csuros, S. Juhos and A. Berces
	Approximating Parameterized Convex Optimization Problems J. Giesen, M. Jaggi and S. Laue	Determining Edge Expansion and Other Connectivity Measures of Graphs of Bounded Genus V. Patel	Design of an Efficient Out-of-Core Read Alignment Algorithm A.S. Konagurthu, L. Allison, T. Conway, B. Beresford-Smith and J. Zobel
	Optimization with More than One Budget F. Grandoni and R. Zenklusen	Fast Approximation in Subspaces by Doubling Metric Decomposition M. Cygan, L. Kowalik, M. Mucha, M. Pilipczuk and P. Sankowski	Estimation of alternative splicing isoform frequencies from RNA-Seq data M. Nicolae, S. Mangul, I. Mandoiu and A. Zelikovsky
18:30 - 22:00	Conference dinner (Gusto Restaurant & Bar, Albert Dock)		

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ESA/WABI schedule
WEDNESDAY 8 Sept 2010

8:30 - 9:00	Morning coffee		
9:00 - 9:50	Invited talk: Paolo Ferragina <i>Chair: Ulrich Meyer</i> (Grace Suite GS 1 & 2) Data Structures: Time, I/Os, Entropy, Joules!		
10:00 - 10:20	Coffee break		
10:20 - 12:00	Session 8a (ESA) <i>Chair: Khaled Elbassioni</i> (GS 1)	Session 8b (ESA) <i>Chair: Jeff Philips</i> (GS 2)	Session 8c (WABI) <i>Chair: Sebastian Böcker</i> (GS 3)
	Weighted Congestion Games: Price of Anarchy, Universal Worst-Case Examples, Tightness K. Bhawalkar, M. Gairing and T. Roughgarden	Frechet Distance of Surfaces: Some Simple Hard Cases K. Buchin, M. Buchin and A. Schulz	Haplotype Inference on Pedigrees with Recombinations and Mutations Y. Pirola, P. Bonizzoni and T. Jiang
	Computing Pure Nash and Strong Equilibria in Bottleneck Congestion Games T. Harks, M. Hoefer, M. Klimm and A. Skopalik	Geometric Algorithms for Private-Cache Chip Multiprocessors D. Ajwani, N. Sitchinava and N. Zeh	Data structures for accelerating Tanimoto queries on real valued vectors T.G. Kristensen and C.N.S. Pedersen
	Combinatorial Auctions with Verification are Tractable P. Krysta and C. Ventre	Volume in General Metric Spaces I. Abraham, Y. Bartal, O. Neiman and L. Schulman	Swiftly Computing Center Strings F. Hufsky, L. Kuchenbecker, K. Jahn, J. Stoye and S. Böcker
	How to Allocate Goods in an Online Market? Y. Azar, N. Buchbinder and K. Jain	Shortest Cut Graph of a Surface with Prescribed Vertex Set É. Colin de Verdière	Pair HMM based gap statistics for re-evaluation of indels in alignments with affine gap penalties A. Schönhuth, R. Salari and S.C. Sahinalp
12:00 - 13:30	Lunch		
13:30 - 15:10	Session 9a (ESA) <i>Chair: Mikko Koivisto</i> (GS 1)	Session 9b (ESA) <i>Chair: Lars Engebretsen</i> (GS 2)	Session 9c (WABI) <i>Chair: Vincent Moulton</i> (GS 3)
	Induced matchings in subcubic planar graphs R. Kang, M. Mnich and T. Müller	Data Structures for Storing Small Sets in the Bitprobe Model J. Radhakrishnan, S. Shah and S. Shannigrahi	Speeding up Exact Motif Discovery by Bounding the Expected Clump Size T. Marschall and S. Rahmann
	Robust Matchings and Matroid Intersections Y. Kobayashi, R. Fujita and K. Makino	On Space Efficient Two Dimensional Range Minimum Data Structures G.S. Brodal, P. Davoodi and S.S. Rao	Quantifying the strength of natural selection of a motif sequence C.-H. Yeang
	A 25/17-Approximation Algorithm for the Stable Marriage Problem with One-Sided Ties K. Iwama, S. Miyazaki and H. Yanagisawa	Pairing Heaps with Costless Meld A. Elmasry	
	Strongly Stable Assignment N. Chen and A. Ghosh	Top-k Ranked Document Search in General Text Databases S. Culpepper, G. Navarro, S. Puglisi and A. Turpin	
15:10 - 15:30	Coffee break		
15:30 - 16:45	ESA Best Paper Session <i>Chair: Mark de Berg</i> (GS 1 & 2)		
	Shortest Paths in Planar Graphs with Real Lengths in $O(n \log^2(n) / \log \log n)$ (best student paper) Shay Mozes and Christian Wulff-Nilsen		
	When LP is the Cure for Your Matching Woes: Improved Bounds for Stochastic Matchings (best paper) Nikhil Bansal, Anupam Gupta, Jian Li, Julian Mestre, Viswanath Nagarajan and Atri Rudra		
	Feasibility Analysis of Sporadic Real-Time Multiprocessor Task Systems (best paper) Vincenzo Bonifaci and Alberto Marchetti-Spaccamela		