

The 19th International Symposium on Algorithms and Computation (ISAAC 2008)

Gold Coast International Hotel,
Gold Coast, Australia, December 15-17, 2008



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Session Schedule

December 14 (Sun)

17:00 – 19:00 Registration
Reception (Ballroom Foyer, Ground Floor)

December 15 (Mon)

8:30 – Registration

	Room A	Room B
9:00 – 9:10	Opening	
9:10 – 10:10	Invited Talk	
10:10 – 10:30	Coffee Break	
10:30 – 12:10	Approximation Algorithm I	Online Algorithm
12:10 – 14:00	Lunch	
14:00 – 15:40	Data Structure and Algorithm	Game Theory
15:40 – 16:00	Coffee Break	
16:00 – 18:05	Graph Algorithm I	Fixed Parameter Tractability

December 16 (Tue)

	Room A	Room B
9:00 – 10:00	Invited Talk	
10:00 – 10:20	Coffee Break	
10:20 – 12:00	Distributed Algorithm	Database
12:00 – 14:00	Lunch	
14:00 – 15:40	Approximation Algorithm II	Computational Biology
15:40 – 16:00	Coffee Break	
16:00 – 18:05	Computational Geometry I	Complexity I
19:00 – 19:30	Free Drink	
19:30 – 22:00	Conference Dinner	

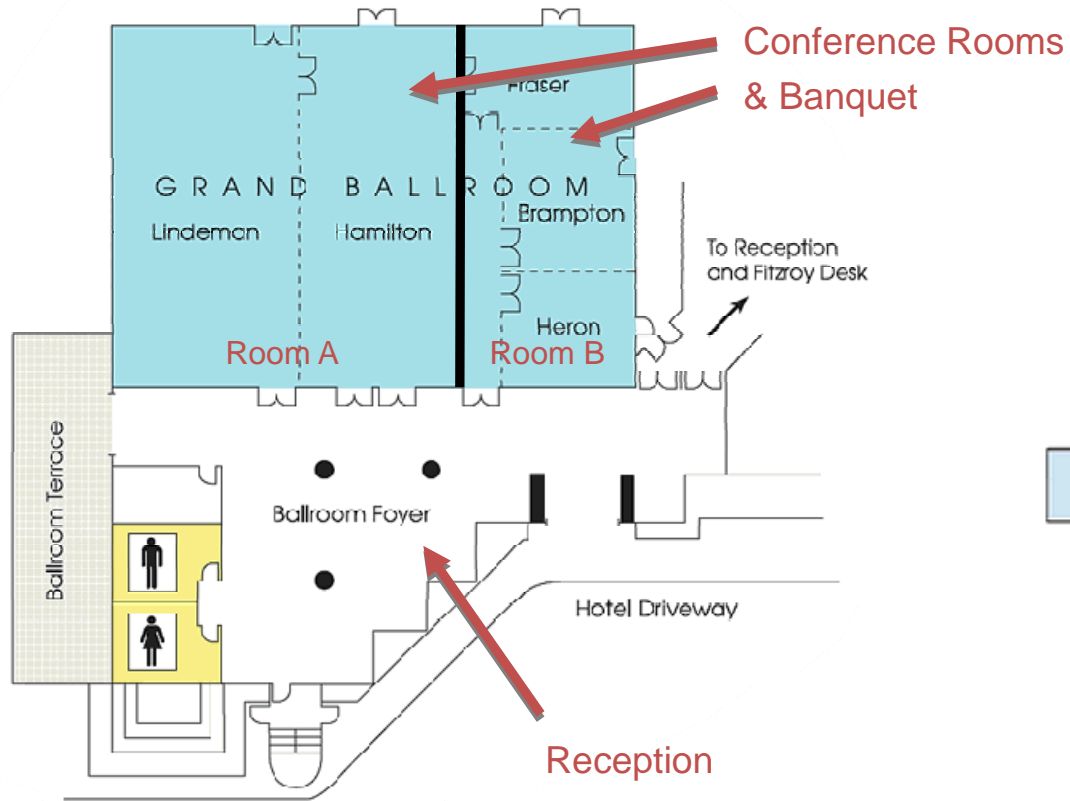
December 17 (Wed)

	Room A	Room B
9:00 – 10:00	Invited Talk	
10:00 – 10:20	Coffee Break	
10:20 – 12:00	Computational Geometry II	Network
12:00 – 14:00	Lunch	
14:00 – 15:40	Optimization	Routing
15:40 – 16:00	Coffee Break	
16:00 – 18:05	Graph Algorithm II	Complexity II
	Closing	

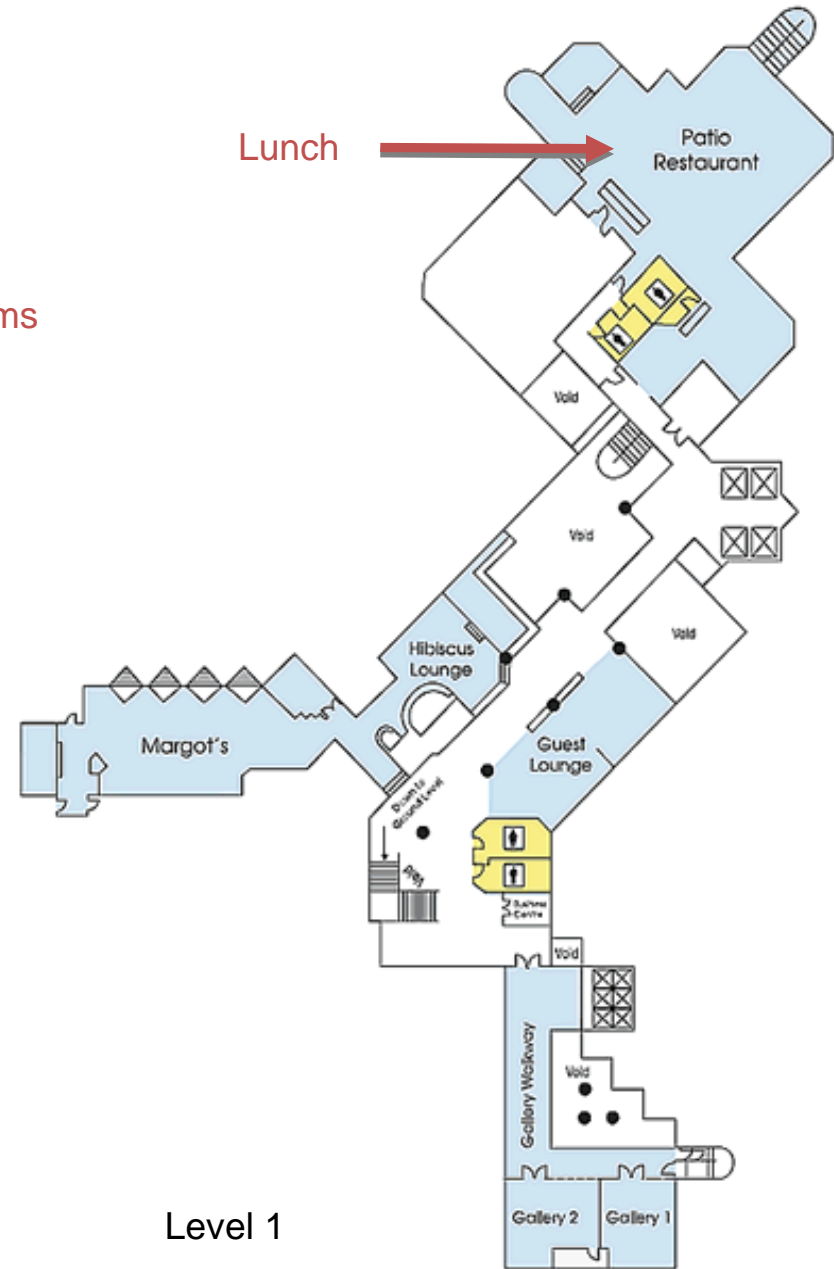
Presentation Information

- Each contributed talk consists of presentation for 20 minutes and question-and-answer for 3 minutes.
- There will be a laptop and a projector in each lecture room for presentation. However, we strongly recommend bringing your own laptop for your presentation.
- Please test your laptop and slides before your session starts.
- OHP and whiteboard are NOT available.

Floor Map



Ground Floor



Level 1

December 15 (Mon) 9:00 – 14:00

	Room A	Room B
9:00 – 9:10	Opening	
9:10 – 10:10	Invited Talk Chair: Seokhee Hong Testuo Asano. <i>Constant-Working-Space Algorithms: How Fast Can We Solve Problems without Using Any Extra Array?</i>	
10:10 – 10:30	Coffee Break	
	Approximation Algorithm I Chair: Christoph Buchheim	Online Algorithm Chair: Hsu-Chun Yen
10:30 – 10:55	Zeyu Guo, He Sun and Hong Zhu. <i>Greedy Construction of 2-Approximation Minimum Manhattan Network</i>	Sumit Ganguly. <i>Data Stream Algorithms via Expander Graphs</i>
10:55 – 11:20	Frank Kammer and Torsten Tholey. <i>The Complexity of Minimum Convex Coloring</i>	Shuichi Miyazaki and Kazuya Okamoto. <i>Improving the Competitive Ratio of the Online OVFSF Code Assignment Problem</i>
11:20 – 11:45	Takehiro Ito, Erik D. Demaine, Nicholas J.A. Harvey, Christos H. Papadimitriou, Martha Sideri, Ryuhei Uehara and Yushi Uno. <i>On the Complexity of Reconfiguration Problems</i>	Weiwei Wu, Minming Li and Enhong Chen. <i>Optimal Key Tree Structure for Deleting Two or More Leaves</i>
11:45 – 12:10	Christian Glaßer, Christian Reitwießner and Heinz Schmitz. <i>Multiobjective Disk Cover Admits a PTAS</i>	Martin R. Ehmsen, Lene M. Favrholdt, Jens S. Kohrt and Rodica Mihal. <i>Comparing First-Fit and Next-Fit for Online Edge Coloring</i>
12:10 – 14:00	Lunch (Patio Restaurant, Level 1)	

December 15 (Mon) 14:00 – 18:05

	Room A	Room B
	Data Structure and Algorithm Chair: Lars Arge	Game Theory Chair: Anastasios Viglas
14:00– 14:25	Gerth Stølting Brodal and Allan Grønlund Jørgensen. <i>Selecting Sums in Arrays</i>	Yingchao Zhao, Wei Chen and Shang-Hua Teng. <i>The Isolation Game: A Game of Distances</i>
14:25– 14:50	Craig Dillabaugh, Meng He and Anil Maheshwari. <i>Succinct and I/O Efficient Data Structures for Traversal in Trees</i>	Evangelos Bampas, Aris Pagourtzis, Giorgos Pierrakos and Katerina Potika. <i>On a Non-Cooperative Model for Wavelength Assignment in Multifiber Optical Networks</i>
14:50 – 15:15	Simon J. Puglisi and Andrew Turpin. <i>Space-Time Tradeoffs for Longest-Common-Prefix Array Computation</i>	Shankar Kalyanaraman and Christopher Umans. <i>The Complexity of Rationalizing Matchings</i>
15:15 – 15:40	Daniel Raible and Henning Fernau. <i>Power Domination in $O^*(1.7548^n)$ using Reference Search Trees</i>	Panagiota N. Panagopoulou and Paul G. Spirakis. <i>A Game Theoretic Approach for Efficient Graph Coloring</i>
15:40 – 16:00	Coffee Break	
	Graph Algorithm I Chair: Kyung-Yong Chwa	Fixed Parameter Tractability Chair: Giuseppe Liotta
16:00 – 16:25	[Best Paper Award] Takehiro Ito, Takeaki Uno, Xiao Zhou and Takao Nishizeki. <i>Partitioning a Weighted Tree to Subtrees of Almost Uniform Size</i>	Joachim Kneis, Alexander Langer and Peter Rossmanith. <i>A New Algorithm for Finding Trees with Many Leaves</i>
16:25 – 16:50	Mingyu Xiao. <i>An improved Divide-and-Conquer Algorithm for Finding All Minimum k-way Cuts</i>	Hans L. Bodlaender, Pinar Heggernes and Yngve Villanger. <i>Faster Parameterized Algorithms for Minimum Fill-In</i>
16:50 – 17:15	Michael Lampis, Georgia Kaouri and Valia Mitsou. <i>On the Algorithmic Effectiveness of Digraph Decompositions and Complexity Measures</i>	Michael R. Fellows, Daniel Lokshantov, Neeldhara Misra, Frances A. Rosamond and Saket Saurabh. <i>Graph Layout problems Parameterized by Vertex Cover</i>
17:15 – 17:40	Maxim A. Babenko. <i>An Efficient Scaling Algorithm for the Minimum Weight Bibranching Problem</i>	Hans L. Bodlaender, Eelko Penninx and Richard B. Tan. <i>A Linear Kernel for the k-Disjoint Cycle Problem on Planar Graphs</i>
17:40 – 18:05	Yuta Harada, Hirotaka Ono, Kunihiro Sadakane and Masafumi Yamashita. <i>The Balanced Edge Cover Problem</i>	Sounaka Mishra, Venkatesh Raman, Saket Saurabh and Somnath Sikdar. <i>König Deletion Sets and Vertex Covers above the Matching Size</i>

December 16 (Tue) 9:00 – 14:00

	Room A	Room B
9:00 – 10:00	Invited Talk Chair: Hiroshi Nagamochi Peter Eades. <i>Some Constrained Notions of Planarity</i>	
10:00 – 10:30	Coffee Break	
	Distributed Algorithm Chair: Andrew Goldberg	Database Chair: Takeshi Tokuyama
10:30 – 10:55	Fedor V. Fomin, Petr A. Golovach, Alexander Hall, Matúš Mihalák, Elias Vicari and Peter Widmayer. <i>How to Guard a Graph?</i>	Ehsan Chiniforooshan, Arash Farzan and Mehdi Mirzazadeh. <i>Evaluation of General Set Expressions</i>
10:55 – 11:20	Paola Flocchini, Bernard Mans and Nicola Santoro. <i>Tree Decontamination with Temporary Immunity</i>	Ferdinando Cicalese and Martin Milanič. <i>Computing with Priced Information: When the Value Makes the Price</i>
11:20 – 11:45	Greg Aloupis, Sébastien Collette, Erik D. Demaine, Stefan Langerman, Vera Sacristán and Stefanie Wuhler. <i>Reconfiguration of Cube-Style Modular Robots Using $O(\log n)$ Parallel Moves</i>	Kazuhiisa Makino and Hirotaka Ono. <i>Deductive Inference for the Interiors and Exteriors of Horn Theories</i>
11:45 – 12:10	Yoann Dieudonné and Franck Petit. <i>Squaring the Circle with Weak Mobile Robots</i>	Michael R. Fellows, Daniel Meister, Frances A. Rosamond, R. Sriharan and Jan Arne Telle. <i>Leaf Powers and Their Properties: Using the Trees</i>
12:10– 14:00	Lunch (Patio Restaurant, Level 1)	

December 16 (Tue) 14:00 – 22:00

	Room A	Room B
	Approximation Algorithm II Chair: Sandor Fekete	Computational Biology Chair: Lars Arge
14:00– 14:25	Ali Çivril and Malik Magdon-Ismael. <i>Deterministic Column Based Matrix Reconstruction via Greedy Approximation of SVD</i>	Cheng-Wei Luo, Hsiao-Fei Liu, Peng-An Chen and Kun-Mao Chao. <i>Minkowski Sum Selection and Finding</i>
14:25– 14:50	Naveen Garg, Amit Kumar and Muralidhara V N. <i>Minimizing Total Flow-Time: the Unrelated Case</i>	Leo van Iersel and Steven Kelk. <i>Constructing the Simplest Possible Phylogenetic Network from Triplets</i>
14:50 – 15:15	Karl Bringmann and Tobias Friedrich. <i>Approximating the Volume of Unions and Intersections of High-Dimensional Geometric Objects</i>	Jaroslav Byrka, Sylvain Guillemot and Jesper Jansson. <i>New Results on Optimizing Rooted Triplets Consistency</i>
15:15 – 15:40	Christian Glaßer. <i>Space-Efficient Informational Redundancy</i>	M. Oğuzhan Külekci. <i>A Method to Overcome Computer Word Size limitation in Bit-Parallel Pattern Matching</i>
15:40 – 16:00	Coffee Break	
	Computational Geometry I Chair: Pat Morin	Complexity I Chair: Anastasios Viglas
16:00 – 16:25	[Best Student Paper] Ludmila Scharf and Marc Scherfenberg. <i>Inducing Polygons of Line Arrangements</i>	Jin-Yi Cai and Pinyan Lu. <i>Signature Theory in Holographic Algorithms</i>
16:25 – 16:50	Danny Z. Chen and Ewa Misiolek. <i>Free-form Surface Partition in 3-D</i>	David Buchfuhrer. <i>The Complexity of SPP Formula Minimization</i>
16:50 – 17:15	Christian Knauer and Marc Scherfenberg. <i>Approximate Nearest Neighbor Search under Translation Invariant Hausdorff Distance</i>	Eric Goles, Cedric Little and Ivan Rapaport. <i>Understanding a Non-Trivial Cellular Automaton by Finding Its Simplest Underlying Communication Protocol</i>
17:15 – 17:40	Marc van Kreveld, Maarten Löffler and Joseph S.B. Mitchell. <i>Preprocessing Imprecise Points and Splitting Triangulations</i>	Hiroki Morizumi and Genki Suzuki. <i>Negation-Limited Inverters of Linear Size</i>
17:40 – 18:05	Harish Doraiswamy and Vijay Natarajan. <i>Efficient Output-Sensitive Construction of Reeb Graphs</i>	Giovanni Di Crescenzo and Helger Lipmaa. <i>3-Message NP Arguments in The BPK Model with Optimal Soundness and Zero-Knowledge</i>
19:00 – 19:30	Free Drink	
19:30 – 22:00	Conference Dinner (Conference Room)	

December 17 (Wed) 9:00 – 14:00

	Room A	Room B
9:00 – 10:00	Invited Talk Chair: Takuro Fukunaga Robert E. Tarjan. <i>Reachability Problems on Directed Graphs</i>	
10:00 – 10:30	Coffee Break	
	Computational Geometry II Chair: Sandor Fekete	Network Chair: Hiro Ito
10:30 – 10:55	Jonathan Backer and David Kirkpatrick. <i>A Complete Approximation Algorithm for Shortest Bounded-Curvature Paths</i>	Reid Andersen, Christian Borgs, Jennifer Chayes, John Hopcroft, Vahab Mirrokni and Shang-Hua Teng. <i>On the Stability of Web Crawling and Web Search</i>
10:55 – 11:20	Kevin Buchin, Maïke Buchin, Joachim Gudmundsson, Maarten Löffler and Jun Luo. <i>Detecting Commuting Patterns by Clustering Subtrajectories</i>	Tobias Friedrich and Nils Hebbinghaus. <i>Average Update Times for Fully-Dynamic All-Pairs Shortest Paths</i>
11:20 – 11:45	Prosenjit Bose, Paz Carmi, Sébastien Collette and Michiel Smid. <i>On the Stretch Factor of Convex Delaunay Graphs</i>	Loukas Georgiadis. <i>Computing Frequency Dominators and Related Problems</i>
11:45 – 12:10	Hee-Kap Ahn, Peter Brass, Christian Knauer, Hyeon-Suk Na and Chan-Su Shin. <i>Covering a Simple Polygon by Monotone Directions</i>	Shantanu Das, Beat Gfeller and Peter Widmayer. <i>Computing Best Swaps in Optimal Tree Spanners</i>
12:10– 14:00	Lunch (Patio Restaurant, Level 1)	

December 17 (Wed) 14:00 – 18:10

	Room A	Room B
	Optimization Chair: Christoph Buchheim	Routing Chair: Andrew Goldberg
14:00– 14:25	Hee-Kap Ahn and Sang Won Bae. <i>Covering a Point Set by Two Disjoint Rectangles</i>	Basile Couëtoux, Laurent Gourvès, Jérôme Monnot and Orestis A. Telelis. <i>On Labeled Traveling Salesman Problems</i>
14:25– 14:50	Christian Wulff-Nilsen. <i>Computing the Maximum Detour of a Plane Graph in Subquadratic Time</i>	Feodor F. Dragan and Martin Matamala. <i>Navigating in a Graph by Aid of Its Spanning Tree</i>
14:50 – 15:15	Harold N. Gabow and Shuxin Nie. <i>Finding Long Paths, Cycles and Circuits</i>	Binay Bhattacharya, Paz Carmi, Yuzhuang Hu and Qiaosheng Shi. <i>Single Vehicle Scheduling Problem on Path/Tree/Cycle Networks with Release and Handling Times</i>
15:15 – 15:40	Jun Luo and Christian Wulff-Nilsen. <i>Computing Best and Worst Shortcuts of Graphs Embedded in Metric Spaces</i>	Daniel Delling and Giacomo Nannicini. <i>Bidirectional Core-Based Routing in Dynamic Time-Dependent Road Networks</i>
15:40 – 16:00	Coffee Break	
	Graph Algorithm II Chair: Giuseppe Liotta	Complexity II Chair: Kazuyuki Amano
16:00 – 16:25	Ryuhei Uehara. <i>Bandwidth of Bipartite Permutation Graphs</i>	Beate Bollig and Jochen Klump. <i>New Results on the Most Significant Bit of Integer Multiplication</i>
16:25 – 16:50	Andreas Brandstädt, Tilo Klemmt, Vadim V. Lozin and Raffaele Mosca. <i>Independent Sets of Maximum Weight in Apple-Free Graphs</i>	Felix G. König and Marco E. Lübbecke. <i>Sorting with Complete Networks of Stacks</i>
16:50 – 17:15	Yasuko Matsui, Ryuhei Uehara and Takeaki Uno. <i>Enumeration of Perfect Sequences of Chordal Graph</i>	Andris Ambainis, Kazuo Iwama, Masaki Nakanishi, Harumichi Nishimura, Rudy Raymond, Seiichiro Tani and Shigeru Yamashita. <i>Quantum Query Complexity of Boolean Functions with Small On-Sets</i>
17:15 – 17:40	Vadim V. Lozin. <i>From Tree-width to Clique-Width: Excluding a Unit Interval Graph</i>	Ashley Montanaro, Harumichi Nishimura and Rudy Raymond. <i>Unbounded-Error Quantum Query Complexity</i>
17:40 – 18:05	Leizhen Cai, Elad Verbin and Lin Yang. <i>Firefighting on Trees: $(1-1/e)$-Approximation, Fixed Parameter Tractability and a Subexponential Algorithm</i>	Rūsiņš Freivalds. <i>Super-exponential Size Advantage of Quantum Finite Automata with Mixed States</i>
18:05– 18:10	Closing	