



COCOON 2001 Program

August 19 (Sunday)

9:00am-8:00pm: Registration

7:00pm-10:00pm: Reception



August 20 (Monday)

Session A.1: Complexity Theory. Chair: K.-I. Ko

8:20-8:45: Complete Problems for Valiant's Class of qp-Computable Families of Polynomials
Markus Blaeser

8:45-9:10: Log-space Constructible Universal Traversal Sequences for Cycles of Length $O(n^{\{4.03\}})$
Michal Koucky

9:10-9:35: On Universally Polynomial Context-Free Languages
Nicholas Tran

Session B.1: Computational Biology. Chair: T. Jiang

8:20-8:45: Enhanced Sequence Reconstruction with DNA Microarray Application
Samuel A. Heath, Franco P. Preparata

8:45-9:10: Non-Approximability of Weighted Multiple Sequence Alignment
Bodo Siebert

9:10-9:35: A Greedy Algorithm for Optimal Recombination
Shiquan Wu, Xun Gu

Coffee Break: 9:35-10:05

Session A.2: Steiner Trees. Chair: D.T. Lee

10:05-10:30: The Euclidean Bottleneck Steiner Tree and Steiner Tree with Minimum Number of Steiner Points
Ding-Zhu Du, Lusheng Wang, Baogang Xu

10:30-10:55: An FPTAS for Weight-Constrained Steiner Trees in Series-Parallel Graphs
Guangting Chen, Guoliang Xue

Session B.2: Graph Drawing. Chair: Sharon Hu

10:05-10:30: Irene Finocchi
Layered Drawings of Graphs with Crossing Constraints

10:30-10:55: Irene Finocchi, Rossella Petreschi
On the Validity of Hierarchical Decompositions

Invited Lecture. Chair: Y. Gurevich

11:00-12:00: The Digital Envelope--A Crash Course in Modern Cryptography
Avi Wigderson, IAS, Princeton & Hebrew University, Jerusalem

Abstract: The talk is planned for a general audience, and no particular background is assumed.

While Cryptography has existed for millenia, the basic theory which underlies all security on the internet and electronic commerce today has been developed within Theoretical Computer Science in a dazzling brief time span starting in the late 70's.

In this talk I will try to describe the fundamental assumptions of this (complexity-based cryptography) theory, the exciting development of ideas and notions (like one-way functions and zero-knowledge proofs), and how they enable basic tasks (like secure communication), as well as arbitrarily complex tasks (like playing a game of Poker over the telephone).



Lunch: 12:00-1:30

Session A.3: Graph Algorithms & Complexity. Chair: R. Reischuk

- 1:30-1:55: A Space Saving Trick for Directed Dynamic Transitive Closure and Shortest Path Algorithms
Valerie King, Mikkel Thorup
- 1:55-2:20: Finding the Most Vital Node of a Shortest Path
Enrico Nardelli, Guido Proietti, Peter Widmayer
- 2:20-2:45: Algorithm for the Cost Edge-Coloring of Trees
Xiao Zhou, Takao Nishizeki
- 2:45-3:10: Counting \mathbb{H} -Colorings of Partial \mathbb{k} -Trees
Josep Diaz, Maria Serna, Dimitrios M. Thilikos

Session B.3: Online Algorithms. Chair: F. Chin

- 1:30-1:55: Improved On-line Stream Merging: from a Restricted to a General Setting
Wun-Tat Chan, Tak-Wah Lam, Hing-Fung Ting, Wai-Ha Wong
- 1:55-2:20: On-line Deadline Scheduling on Multiple Resources
Jae-Hoon Kim, Kyung-Yong Chwa
- 2:20-2:45: Competitive Online Scheduling with Level of Service
Ee-Chien Chang, Chee Yap
- 2:45-3:10: On-line Variable Sized Covering
Leah Epstein

Coffee Break: 3:10-3:40

Session A.4 Computational Geometry. Chair: D.Z. Chen

- 3:40-4:05: On the Planar Two-Watchtower Problem
Sergei Bespamyatnikh, Zhixiang Chen, Kanliang Wang, Binhai Zhu
- 4:05-4:30: Efficient Generation of Triconnected Plane Triangulations
Shin-ichi Nakano
- 4:30-4:55: Packing Two Disks into a Polygonal Environment
Prosenjit Bose, Pat Morin, Antoine Vigneron
- 4:55-5:20: How Good Is Sink Insertion?
Xiang-Yang Li, Yu Wang

Session B.4: Graph Theory. Chair: K.-Y. Chwa

- 3:40-4:05: Cluttered Orderings for the Complete Graph
Myra Cohen, Charles Colbourn, Dalibor Froncek

- 4:05-4:30: On the Domination Numbers of Generalized de Bruijn Digraphs and Generalized Kautz Digraphs
Yosuke Kikuchi, Yukio Shibata
- 4:30-4:55: A Notion of Cross-Perfect Bipartite Graphs
Milind Dawande
- 4:55-5:20: Some Results on Orthogonal Factorizations
Haodi Feng

August 21 (Tuesday)

Session A.5: Computational Geometry. Chair: B. Chazelle

- 8:20-8:45: Generating Well-Shaped d-Dimensional Delaunay Meshes
Xiang-Yang Li
- 8:45-9:10: Towards Compatible Triangulations
Oswin Aichholzer, Franz Aurenhammer, Hannes Krasser, Ferran Hurtado
- 9:10-9:35: An Improved Upper Bound on the Size of Planar Convex-Hulls
Abdullah N. Arslan, Ömer Egecioglu

Session B.5: Data Structures and Algorithms. Chair: R. Reischuk

- 8:20-8:45: PC-Trees vs. PQ-Trees
Wen-Lian Hsu
- 8:45-9:10: Stacks versus Deques
Holger Petersen
- 9:10-9:35: Optimizing a Computational Method for Length Lower Bounds for Reflecting Sequences
H. K. Dai

Coffee Break: 9:35-10:05

Session A.6: Graph Algorithms and Complexity. Chair: F. Chin

- 10:05-10:30: A New Measure of Edit Distance Between Labeled Trees
Chin Lung Lu, Zheng-Yao Su, Chuan Yi Tang
- 10:30-10:55: A Linear Time Algorithm for Enumerating All the Minimum and Minimal Separators of A Chordal Graph
L. Sunil Chandran

Session B.6: Systems Algorithms and Modeling. Chair: D.T. Lee

- 10:05-10:30: Decidable Approximations on Generalized and Parameterized Discrete Timed Automata
Zhe Dang, Oscar H. Ibarra, Richard A. Kemmerer
- 10:30-10:55: Multiplicative Adaptive Algorithms for User Preference Retrieval
Zhixiang Chen

Invited Lecture. Chair: J. Wang

- 11:00-12:00 A Few Fundamental Open Questions in Computational Geometry
Bernard Chazelle, Princeton University, USA

Lunch: 12:00-1:30



Session A.7: Complexity Theory. Chair: L. Wang

- 1:30-1:55: Separating Oblivious and Non-Oblivious BPs
Kazuo Iwama, Yasuo Okabe, Toshiro Takase
- 1:55-2:20: Program Schemes, Queues, the Recursive Spectrum and Zero-One Laws
Iain A. Stewart
- 2:20-2:45: Algebraic Properties for P-Selectivity
Lane Hemaspaandra, Harald Hempel, Arfst Nickelsen
- 2:45-3:10: Parallelizability of Some P-Complete Geometric Problems in the EREW-PRAM
Carla Denise Castanho, Wei Chen, Koichi Wada, Akihiro Fujiwara



Session B.7: Randomized and Average-Case Algorithms. Chair: B. Chazelle

- 1:30-1:55: On Testing for Zero Polynomials by a Set of Points with Bounded Precision
Jin-Yi Cai, Eric Bach
- 1:55-2:20: A Randomized Algorithm for Gossiping in Radio Networks
Marek Chrobak, Leszek Gasieniec, Wojciech Rytter
- 2:20-2:45: Deterministic Application of Grover's Quantum Search Algorithm
Kyoichi Okamoto, Osamu Watanabe
- 2:45-3:10: Random Instance Generation for MAX 3SAT
Mitsuo Motoki

Coffee Break: 3:10-3:40

Session A.8: Computational Geometry. Chair: J. Wang

- 3:40-4:05: Maximum Red/Blue Interval Matching with Applications
Danny Z. Chen, Xiaobo (Sharon) Hu, Xiaodong Wu
- 4:05-4:30: Computing Farthest Neighbors on a Convex Polytope
Otfried Cheong, Chan-Su Shin, Antoine Vigneron
- 4:30-4:55: Polynomial Time Algorithms for Three-Label Point Labeling
Rob Duncan, Jianbo Qian, Binhai Zhu
- 4:55-5:20: Finding An Optimal Bridge Between Two Polygons
Xuehou Tan

Session B.8: Graph Theory. Chair: K.-Y. Chwa

- 3:40-4:05: Lower Bounds on the Minus Domination and k -Subdomination Numbers
Liyang Kang, Hong Qiao, Erfang Shan, Ding-Zhu Du
- 4:05-4:30: Edge Connectivity vs Vertex Connectivity in Chordal Graphs
L. Sunil Chandran
- 4:30-4:55: Changing the Diameter of Graph Products
Ting-Yi Sung, Jeng-Jung Wang
- 4:55-5:20: Plane Graphs with Acyclic Complex
Baogang Xu

Conference Banquet: 6:30-8:30

August 22 (Wednesday): Conference Tour to Yangshuo

August 23 (Thursday)

Session A.9: Games and Combinatorics. Chair: T. Jiang

- 8:20–8:45: Competitive Facility Location along a Highway
Hee-Kap Ahn, Siu-Wing Cheng, Otfried Cheong, Mordecai Golin, Rene van Oostrum
- 8:45–9:10: Membership for Core of LP Games and Other Games
Qizhi Fang, Shanfeng Zhu, Maocheng Cai, Xiaotie Deng
- 9:10–9:35: Strong Solutions to the Identification Problem
Pino Caballero-Gil, Candelaria Hernandez-Goya
- 9:35–10:00: Area Efficient Exponentiation Using Modular Multiplier/Squarer in $GF(2^n)$
Hyun-Sung Kim, Kee-Young Yoo



Session B.9: Graph Algorithms and Complexity. Chair: D.Z. Chen

- 8:20–8:45: Graph Separators: A Parameterized View
Jochen Alber, Henning Fernau, Rolf Niedermeier
- 8:45–9:10: On Assigning Prefix Free Codes to the Vertices of A Graph
N. S. Narayanaswamy, C. E. Veni Madhavan
- 9:10–9:35: A Highly Efficient Algorithm to Determine Bicritical Graphs
Dingjun Lou, Ning Zhong
- 9:35–10:00: Approximation Algorithms for the Watchman Route and Zookeeper's Problems
Xuehou Tan

Coffee Break: 10:00–10:30

Session A.10: Computability. Chair: K.-I. Ko

- 10:30–10:55: Prefix-Free Languages and Initial Segments of Computably Enumerable Degrees
Guohua Wu
- 10:55–11:20: Weakly Computable Real Numbers and Total Computable Real Functions
Robert Rettinger, Xizhong Zheng, Romain Gengler, Burchard von Braunmühl
- 11:20–11:45: Turing Computability of a Nonlinear Schrödinger Propagator
Klaus Weihrauch, Ning Zhong

Session B.10: Systems Algorithms and Modeling. Chair: L. Wang

- 10:30–10:55: Parametric Scheduling for Network Constraints
K. Subramani
- 10:55–11:20: A Logical Framework for Knowledge Sharing in Multi-Agent Systems
Kaile Su, Xudong Luo, Huaiqing Wang, Shichao Zhang, Qingfeng Chen
- 11:20–11:45: A Lockout Avoidance Algorithm without Using Time-Stamps for the k -Exclusion Problem
Kumiko Obokata, Michiko Omori, Kazuhiro Motegi, Yoshihide Igarashi

Lunch: 12:00–1:30