



COCOON 2022 Program

Beijing Time (GMT+8)

Date: Oct. 22 (Saturday)

Onsite: F1119, SIAT, CAS

Online: Zoom ID: 822 7844 3336 Passcode: cocoon2022

9:00—9:20

Opening Ceremony

Chair:
Yong Zhang

9:20—10:20

keynote 1: *Pinyan Lu*

Title: First Price Auction is $1 - 1/e^2$ Efficient

10:20—10:40

Coffee Break



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Session 1 Chair: Xiaowei Wu	10:40-11:00	Approximation Algorithms for Capacitated Assignment with Budget Constraints and Applications in Transportation Systems <i>Hongyi Jiang, Samitha Samaranayake</i>
	11:00-11:20	Facility Location Games with Group Externalities <i>Houyu Zhou</i>
	11:20-11:40	Facility Location Games with Ordinal Preferences <i>Hau Chan, Minming Li, Chenhao Wang, Yingchao Zhao</i>
	11:40-12:00	Fair Division with Minimal Withheld Information in Social Networks <i>Ivan Bliznets, Anton Bukov, Danil Sagunov</i>

Lunch

Session 2 Chair: Jialin Zhang	14:00-14:20	Hitting Geometric Objects Online via Points in \mathbb{Z}^d <i>Minati De, Satyam Singh</i>
	14:20-14:40	Online one-sided smooth function maximization <i>Hongxiang Zhang, Dachuan Xu, Ling Gai, Zhenning Zhang</i>
	14:40-15:00	Approximation Algorithms for the Min-Max Mixed Rural Postmen Cover Problem and Its Variants <i>Liting Huang, Wei Yu, Zhaohui Liu</i>
	15:00-15:20	A 4-Space Bounded Approximation Algorithm for Online Bin Packing Problem <i>Sizhe Li, Jinghui Xue, Mingming Jin, Kai Wang, Kun He</i>
	15:20-15:40	Algorithms for hard-constraint point processes via discretization <i>Tobias Friedrich, Andreas Göbel, Maximilian Katzmann, Martin S. Krejca, Marcus Pappik</i>

15:40-16:00

Coffee Break

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Chair: Dongjing Miao	16:00-17:00	keynote 2: Leslie Ann Goldberg Instability of backoff protocols with arbitrary arrival rates
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Date: Oct. 22 (Saturday)

Onsite: F1018, SIAT, CAS

Online: Zoom ID: 890 5932 5491 Passcode: cocoon2022

Session 3 Chair: <i>Peng Zhang</i>	10:40-11:00	An $O(n^3)$ -Time Algorithm for the Min-Gap Unit-Length Job Scheduling Problem <i>Fei Li</i>
	11:00-11:20	Turing Machines with Two-level Memory: A Deep Look into the Input/Output Complexity <i>Hengzhao Ma, Jianzhong Li, Xiangyu Gao, Tianpeng Gao</i>
	11:20-11:40	Single machine scheduling with rejection to minimize the k-th power of the makespan <i>Liqi Zhang, Lingfa Lu</i>
	11:40-12:00	Two-Stage BP Maximization under p-matroid Constraint <i>Hong Chang, , Zhicheng Liu, Donglei Du, Xiaoyan Zhang</i>

Lunch

Session 4 Chair: <i>Longkun Guo</i>	14:00-14:20	A stochastic non-monotone DR-submodular maximization problem over a convex set <i>Yuefang Lian, Dachuan Xu, Donglei Du, Yang Zhou</i>
	14:20-14:40	Nondeterministic Auxiliary Depth-Bounded Storage Automata and Semi-Unbounded Fan-in Cascading Circuits (Extended Abstract) <i>Tomoyuki Yamakami</i>
	14:40-15:00	Improved Deterministic Algorithms for Non-monotone Submodular Maximization <i>Xiaoming Sun, Jialin Zhang, Shuo Zhang, Zhijie Zhang</i>
	15:00-15:20	Online non-monotone DR-submodular maximization: 1/4 approximation ratio and sublinear regret <i>Junkai Feng, Ruiqi Yang, Haibin Zhang, Zhenning Zhang</i>

15:20-16:00

Coffee Break

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Date: Oct. 23 (Sunday)

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Session 5 Chair: <i>Shengxin Liu</i>	9:00-9:20	Counting Cycles on Planar Graphs in Subexponential Time <i>Jin-Yi Cai, Ashwin Maran</i>
	9:20-9:40	Semi-strict chordal digraphs <i>Jing Huang, YingYing Ye</i>
	9:40-10:00	An evolving network model from clique extension <i>Anthony Bonato, Ryan Cushman, Trent G. Marbach, Zhiyuan Zhang</i>
	10:00-10:20	The Hamiltonian Path Graph is Connected for Simple s, t Paths in Rectangular Grid Graphs <i>Rahnuma Islam Nishat, Venkatesh Srinivasan, Sue Whitesides</i>
10:20-10:40		Coffee Break
Session 6 Chair: <i>Hubert Chan</i>	10:40-11:00	Fully Dynamic k-Center Clustering with Outliers <i>T-H. Hubert Chan, Silvio Lattanzi, Mauro Sozio, Bo Wang</i>
	11:00-11:20	Improved Separated Red-Blue Center Clustering <i>Yuan Sha</i>
	11:20-11:40	Online semi-matching problem with two heterogeneous sensors in a metric space <i>Man Xiao, Weidong Li</i>
	11:40-12:00	Approximation Schemes for k-Facility Location <i>Xiangyan Kong, Zhen Zhang</i>

Lunch



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Session 7 Chair: Weitian Tong	9:00-9:20	Revisiting Maximum Satisfiability and Related Problems in Data Streams <i>Hoa T. Vu</i>
	9:20-9:40	Escape from the Room <i>Kento Kimura, Kazuyuki Amano, Shin-ichi Nakano</i>
	9:40-10:00	A quantum version of Pollard's Rho of which Shor's Algorithm is a particular case <i>Daniel Chicayban Bastos, Luis Antonio Kowada</i>
10:20-10:40		Coffee Break
Session 8 Chair: Minming Li	10:40-11:00	Optimal Window Queries on Line Segments using the Trapezoidal Search DAG <i>Milutin Brankovic, Martin P. Seybold</i>
	11:00-11:20	Rotation Distance for Rank Bounded Trees <i>SKM Anoop, Jayalal Sarma</i>
	11:20-11:40	Proper colorability of segment intersection graphs <i>Robert D. Barish, Tetsuo Shibuya</i>
	11:40-12:00	Generalized Sweeping Line Spanners <i>Keenan Lee, André van Renssen</i>

Lunch



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Session 9 Chair: Shaofeng Jiang	14:00-14:20	Space Limited Graph Algorithms on Big Data <i>Jianer Chen, Zirui Chu, Ying Guo, Wei Yang</i>
	14:20-14:40	Refined Computational Complexities of Hospitals/Residents Problem with Regional Caps <i>Koki Hamada, Shuichi Miyazaki</i>
	14:40-15:00	Some New Results on Gallai Theorem and Perfect Matching for k-Uniform Hypergraphs <i>Zhongzheng Tang, Zhuo Diao</i>
	15:00-15:20	Linear-Time Algorithm for Paired-Domination on Distance-Hereditary Graphs <i>Ta-Yu Mu, Ching-Chi Lin</i>
	15:20-15:40	Capacitated Facility Location with Outliers/Penalties <i>Rajni Dabas, Neelima Gupta</i>
15:40-16:00	Coffee Break	
Session 10 Chair: Thomas Erlebach	16:00-16:20	A Probabilistic Model Revealing Shortcomings in Lua's Hybrid Tables <i>Conrado Martínez, Cyril Nicaud, Pablo Rotondo</i>
	16:20-16:40	LotterySampling: A Randomized Algorithm for the Heavy Hitters and Top-k Problems in Data Streams <i>Conrado Martínez, Gonzalo Solera-Pardo</i>
	16:40-17:00	On the Complexity of Minimum Maximal Acyclic Matchings <i>Juhi Chaudhary, Sounaka Mishra, B S Panda</i>
	17:00-17:20	Rooting Gene Trees via Phylogenetic Networks <i>Jerzy Tiuryn, Natalia Rutecka, Paweł Górecki</i>



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Session 11 Chair: <i>Biaoshuai Tao</i>	14:00-14:20	The bound coverage problem by aligned disks in L_1 metric <i>Xiaofei Liu, Zhonghao Liu</i>
	14:20-14:40	Distributed Dominating Sets in Interval Graphs <i>Barun Gorain, Kaushik Mondal, Supantha Pandit</i>
	14:40-15:00	Reallocation Problems with Minimum Completion Time <i>Toshimasa Ishii, Jun Kawahara, Kazuhisa Makino, Hirotaka Ono</i>
	15:00-15:20	Flow shop scheduling problems with transportation constraints revisited <i>Yuan Yuan, Xin Han, Yan Lan</i>
	15:20-15:40	Analysis of Approximate sorting in I/O model <i>Tianpeng Gao, Jianzhong Li</i>
15:40-16:00	Coffee Break	
Session 12 Chair: <i>Yukun Cheng</i>	16:00-16:20	Two Generalizations of Proper Coloring: Hardness and Approximability <i>Ivan Bliznets, Danil Sagunov</i>
	16:20-16:40	Large k-gons in a 1.5D Terrain <i>Vahideh Keikha</i>
	16:40-17:00	Customizable Hub Labeling: Properties and Algorithms <i>Johannes Blum, Sabine Storandt</i>
	17:00-17:20	Bounding the Number of Eulerian Tours in Undirected Graphs <i>Giulia Punzi</i>
	17:20-17:40	Refutation of Spectral Graph Theory Conjectures with Monte Carlo Search <i>Milo Roucairol, Tristan Cazenavea</i>