

COCOON 2020

The 26th International Computing and Combinatorics Conference

Atlanta, GA, USA (Fully Online), August 29-31, 2020

[Home \(../index.html\)](#)

[Committee \(Committee.html\)](#)

[Keynotes \(Keynotes.html\)](#)

[Accepted Papers \(Accepted_Papers.html\)](#)

[Program](#)

[Venue \(Venue.html\)](#)

[Registration \(Registration.html\)](#)



Program

Program for COCOON 2020 Main Conference (In Eastern Time Zone)

Online Proceeding is available at [HERE](https://link.springer.com/book/10.1007/978-3-030-58150-3)
(<https://link.springer.com/book/10.1007/978-3-030-58150-3>).

August 29, 2020, Saturday

Opening and Invited Talk	
9:00 - 9:10	<i>Opening</i> <i>Prof. R.N. Uma and Prof. Donghyun Kim (TPC co-Chairs)</i>
9:10 - 10:00	<i>Keynote 1</i> <i>Prof. Zhi Tian (Host: Prof. Donghyun Kim)</i>

10:00 - 10:10	<i>Break</i>
10:10 - 11:00	<i>Keynote 2</i> <i>Prof. Junshan Zhang (Host: Prof. Zhipeng Cai)</i>
11:00 - 11:30	Virtual Coffee Break
11:30 - 13:00	Virtual Lunch Break
Session 1 (Chair: Dr. Peng Zhang)	
13:00 - 13:20	<i>Flavia Bonomo-Braberman, Julliano Nascimento, Fabiano Oliveira, Uéverton Souza and Jayme Szwarcfiter</i> Linear-time Algorithms for Eliminating Claws in Graphs
13:20 - 13:40	<i>Jasine Babu and Veena Prabhakaran</i> A new lower bound for the eternal vertex cover number of graphs
13:40 - 14:00	<i>Jan Gorzny and Jing Huang</i> End-Vertices of AT-free Bigraphs
14:00 - 14:20	<i>Nicolas Grelier</i> Computing a Maximum Clique in Geometric Superclasses of Disk Graphs
14:20 - 14:40	<i>Kathie Cameron, Jan Goedgebeur, Shenwei Huang and Yongtang Shi</i> k-Critical Graphs in P_5 -Free Graphs
14:40 - 15:00	Virtual Coffee Break
Session 2 (Chair: Dr. Anirban Ghosh)	
15:00 - 15:20	<i>Johannes Blum</i> W[1]-Hardness of the k-Center Problem Parameterized by the Skeleton Dimension

15:20 - 15:40	<i>Bin Fu</i> Hardness of Sparse Sets and Minimal Circuit Size Problem
15:40 - 16:00	<i>Andrea Caucchiolo and Ferdinando Cicalese</i> On the complexity of directed intersection representation of DAGs
16:00 - 16:20	<i>Manuel Lafond</i> Even better fixed-parameter algorithms for bicluster editing
16:20 - 16:40	<i>Bin Fu, Pengfei Gu and Yuming Zhao</i> Approximate Set Union via Approximate Randomization

August 30, 2020, Sunday

Session 3 (Chair: Dr. Xiaoming Sun)	
8:10 - 8:30	<i>Zhi Cao and Nan Zhang</i> Deep Specification Mining with Attention
8:30 - 8:50	<i>Prashanth Amireddy, Sai Jayasurya and Jayalal Sarma</i> Power of Decision Trees with Monotone Queries
8:50 - 9:10	<i>Mateus Alves, Mateus De Oliveira Oliveira, Janio Silva and Uéverton Souza</i> Succinct Monotone Circuit Certification: Planarity and Parameterized Complexity
9:10 - 9:30	<i>Prashanth Amireddy, Sai Jayasurya and Jayalal Sarma</i> On the Mystery of Negations in Circuits : Structure vs Power
9:30 - 9:50	Virtual Coffee Break
Session 4 (Chair: Dr. Jayalal Sarma)	
9:50 - 10:10	<i>Amit Deshpande and Rameshwar Pratap</i> Subspace approximation with outliers <i>Best Paper Award Winner</i>

10:10 - 10:30	<i>Rémi Géraud-Stewart, Marius Lombard-Platet and David Naccach</i> Approaching Optimal Duplicate Detection in a Sliding Window
10:30 - 10:50	<i>Mohammad Abouei Mehrizi, Federico Corò, Emilio Cruciani and Gianlorenzo D'Angelo</i> Election Control through Social Influence with Unknown Preferences
10:50 - 11:10	<i>Om Prakash and Raghavendra Rao B V</i> On Measures of Space Over Real and Complex numbers
11:10 - 11:30	<i>Hongxiang Zhang, Dachuan Xu, Longkun Guo and Jingjing Tan</i> Parallelized maximization of nonsubmodular function subject to a cardinality constraint
11:30 - 11:50	<i>Umang Bhaskar and Gunjan Kumar</i> A Non-Extendibility Certificate for Submodularity and Applications
12:00 - 14:00	Virtual Lunch Break
Session 5 (Chair: Dr. Joon-Lyul Lee)	
14:00 - 14:20	<i>Christian Deppe, Vladimir Lebedev, Georg Maringer and Nikita Polianskii</i> Coding with Noiseless Feedback over the Z-channel
14:20 - 14:40	<i>Vipin Singh Sehrawat and Yvo Desmedt</i> Access Structure Hiding Secret Sharing from Novel Set Systems and Vector Families
14:40 - 15:00	<i>Matthew Dippel, Ravi Sundaram and Akshar Varma</i> Realization Problems on Reachability Sequences
15:00 - 15:20	<i>Gregory Gutin, Philip Neary and Anders Yeo</i> Uniqueness of $\$DP\$$ -Nash Subgraphs and $\$D\$$ -sets

15:20 - 15:40	<i>Nai-Wen Chang and Sun-Yuan Hsieh</i> A Survey for Conditional Diagnosability of Alternating Group Networks
15:40 - 16:00	<i>Ivona Bezakova and Wenbo Sun</i> Mixing of Markov Chains for Independent Sets on Chordal Graphs with Bounded Separators
16:00 - 16:20	Virtual Lunch Break
Session 6 (Chair: Dr. Nikita Polianskii)	
16:20 - 16:40	<i>Jie-Fu Huang and Sun-Yuan Hsieh</i> Constructing Independent Spanning Trees in Alternating Group Networks
16:40 - 17:00	<i>Masayuki Miyamoto, Masakazu Iwamura, Koichi Kise and François Le Gall</i> Quantum Speedup for the Minimum Steiner Tree Problem
17:00 - 17:20	<i>Yuichi Asahiro, Eto, Tesshu Hanaka, Guohui Lin, Eiji Miyano and Ippei Terabaru</i> Graph Classes and Approximability of the Happy Set Problem
17:20 - 17:40	<i>Prosenjit Bose, Anthony D'Angelo and Stephane Durocher</i> On the Restricted 1-Steiner Tree Problem <i>Best Paper Runner Up Award Winner</i>
17:40 - 18:00	<i>Xiaoyun Tian, Dachuan Xu, Longkun Guo and Dan Wu</i> An improved Bregman k -means++ algorithm via local search
18:00 - 18:20	<i>Lu Han, Chunlin Hao, Chenchen Wu and Zhenning Zhang</i> Approximation algorithms for the lower-bounded k -median and its generalizations

August 31, 2020, Monday

Session 7 (Chair: Dr. Martin Ziegler)
--

8:10 - 8:30	<i>Seok-Hee Hong and Hiroshi Nagamochi</i> Path-monotonic Upward Drawings of Plane Graphs
8:30 - 8:50	<i>Sanjana Agrawal and R. Inkulu</i> Visibility polygon queries among dynamic polygonal obstacles in plane
8:50 - 9:10	<i>Bengt J. Nilsson, David Orden, Leonidas Palios, Carlos Seara and Paweł Żyliński</i> Shortest Watchman Tours in Simple Polygons under Rotated Monotone Visibility
9:10 - 9:30	<i>Giordano Da Lozzo, D'Angelo and Fabrizio Frati</i> On the Area Requirements of Planar Greedy Drawings of Triconnected Planar Graphs
9:30 - 9:50	Virtual Coffee Break
Session 8 (Chair: Dr. R. Inkulu)	
9:50 - 10:10	<i>André van Renssen and Gladys Wong</i> Bounded-Degree Spanners in the Presence of Polygonal Obstacles <i>Best Paper Runner Up Award Winner</i>
10:10 - 10:30	<i>Stefan Funke</i> Seamless Interpolation between Contraction Hierarchies and Hub Labels for fast and space-efficient Shortest Path Queries in Road Networks
10:30 - 10:50	<i>Milutin Brankovic, André van Renssen and Joachim Gudmundsson</i> Local Routing in a Tree Metric 1-Spanner
10:50 - 11:10	<i>Patrick Eades and Julian Mestre</i> An Optimal Lower Bound for Hierarchical Universal Solutions for TSP on the Plane
11:10 - 11:30	<i>Hans L. Bodlaender, Josse van Dobben de Bruyn, Dion Gijswijt and Harry</i> Constructing Tree Decompositions of Graphs with Bounded Gonality

11:30 - 11:50	<i>Xiaoyan Zhang, Donglei Du, Gutin, Qiaoxia Ming and Jian Sun</i> Approximation algorithms for cluster general routing problem
12:00 - 14:00	Virtual Lunch Break
Session 9 (Chair: Dr. Yan Huang)	
14:00 - 14:20	<i>Kelin Luo and Frits Spiessma</i> Approximation algorithms for car-sharing problems
14:20 - 14:40	<i>Julian Mestre and Nicolas Stier Moses</i> Tight approximation for the minimum bottleneck generalized matching problem
14:40 - 15:00	<i>Stephan Beyer, Markus Chimani and Joachim Spoerhase</i> A Simple Primal-Dual Approximation Algorithm for 2-Edge-Connected Spanning Subgraphs
15:00 - 15:20	<i>Naveed Ahmed Azam, Aleksandar Shurbevski and Hiroshi Nagamochi</i> On the Enumeration of Minimal Non-Pairwise Compatibility Graphs
15:20 - 15:40	<i>Khadija Hadj Salem and Yann Kieffer</i> New Symmetry-less ILP Formulation for the Classical One Dimensional Bin-Packing Problem
15:40 - 16:00	<i>Julien Baste, Maximilian Fürst and Dieter Rautenbach</i> Approximating Maximum Acyclic Matchings by Greedy and Local Search Strategies
16:00 - 16:20	Virtual Lunch Break
Session 10 (Chair: Dr. R.N. Uma)	

16:20 - 16:40	<p><i>Lin Chen, Ahmed Sunny, Lei Xu, Shouhuai Xu, Zhimin Gao, Nolan Shah, Yang Lu and Weidong Shi</i></p> <p>Computational Complexity Characterization of Protecting Elections from Bribery</p>
16:40 - 17:00	<p><i>Xianmin Liu, Jianzhong Li and Yingshu Li</i></p> <p>On the Parameterized Complexity of Completeness Reasoning for Conjunctive Queries</p>
17:00 - 17:20	<p><i>Neeldhara Misra and Harshil Mittal</i></p> <p>Imbalance Parameterized by Twin Cover Revisited</p>
17:20 - 17:40	<p><i>Stefan Hoffmann</i></p> <p>Computational Complexity of Synchronization under Regular Commutative Constraints</p>
17:40 - 18:00	<p><i>Akanksha Agrawal, Madhumita Kundu, Abhishek Sahu, Saket Saurabh and Prafullkumar Tale</i></p> <p>Parameterized Complexity of Maximum Edge Colorable Subgraph</p>
18:00 - 18:20	<p><i>Arijit Bishnu, Arijit Ghosh, Sudeshna Kolay, Gopinath Mishra and Saket Saurabh</i></p> <p>Fixed Parameter Tractability of Graph Deletion Problems over Data Streams</p>