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## Conference Program

The conference venue is at Prince Waikiki, Palolo Room 3&4 (3rd floor),  
[Hotel Map](#)(Click on the image to enlarge):



To Conference room: Take the escalator to 3rd floor and turn slightly right, you will see our Palolo conference room

To 100 Sails Restaurant & Bar : Same 3rd floor, left to the escalator.

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## Hybrid Conference Instruction

### Introduction:

We will use Microsoft Teams ([Download MS Teams](#)) for our hybrid conferencing tool.

### General Instruction:

#### 1. All Registrants:

You will receive the meeting invitation, including meeting ID and password, via the email on our record (e.g., the email on the registration form, the email you used to contact us). Please note: you must be fully registered at COCOON 2023 to receive this information. If you have not received the conference invitation by **Dec. 7th**, please contact our web chairs: Mr. Xiao Li ([xiao.li@utdallas.edu](mailto:xiao.li@utdallas.edu)) and Mr. Ke Su ([ke.su@utdallas.edu](mailto:ke.su@utdallas.edu)).

#### 2. For MS Teams Beginners:

You may need an MS Teams account to join the conference. If you are a new user of MS Teams, please explore and practice the main functions prior to the conference. Some helpful tutorials can be found at the MS Teams Website: [Microsoft Teams video training - Microsoft Support](#).

#### 3. Test Session:

Please feel free to use the test session below any time as you need. To join with meeting ID, please navigate to "Calendar" located at the left menu bar, then find the "# Join with an ID" on the top. Test Session Meeting ID: 262 279 700 122 Password: rbeVwM . Or you can click the direct meeting link to join: [\[meeting link\]](#).

#### 4. Recording and Privacy Policy:

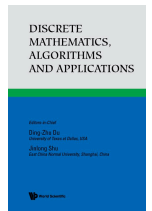
Please note all sessions may be recorded without further notice.

#### 5. Emergency Technical Support:

Mr. Ke Su ([ke.su@utdallas.edu](mailto:ke.su@utdallas.edu)).

### Detailed Instruction:

- **For Online Participants:**



Just join the conference and enjoy the technical sessions. When presenting, share your screen and camera, then start presenting your excellent work. To ask questions, please use the 'raise hand' function in MS Teams, so that session chairs can organize questions in order.

- **For On-Site Participants:**

To ensure your talk is broadcasted to all participants, please also join MS Teams to present your paper. Plug in your laptop to the projector at the conference, so that on-site fellows can see your presentation on your screen.

- **For Session Chairs:**

You must bring your laptop to the conference. Before your session, join the online conference room, and confirm if the presenters are present (either online or on-site). After each talk, please invite questions from both on-site and online participants.

## Session Schedule

**Note: The following schedule follows Hawaii Local Time (UTC/GMT -10), The conference venue is at Prince Waikiki Hotel, Palolo Room 3&4 (3rd floor)**

Day1 (Dec. 15)

8:20-8:30am, Opening  
8:30-9:30am, Keynote (Prof. Funda Ergun, Title: An Algorithmic Approach to Understanding Tumor Evolution from Single Cell Sequencing Data?)  
9:30-9:45am, Coffee Break  
9:45-11:45am Session 1 (7 talks)  
11:45am – 1:15pm Lunch Break  
1:15 -3:15pm Session 2 (7 talks)  
3:15 – 3:30pm Coffee Break  
3:30 -5:47pm Session 3 (8 talks)

Day 2 (Dec. 16)

8:30-9:30am, Keynote (Prof. Yong Tan, Title: When Emotion AI Meets Strategic Users)  
9:30-9:45am, Coffee Break  
9:45-11:45am Session 4 (7 talks)  
11:45am – 1:15pm Lunch Break  
1:15 -3:15pm Session 5 (7 talks)  
3:15 – 3:30pm Coffee Break  
3:30 -6:04pm Session 6 (9 talks)

Day 3 (Dec. 17)

8:30-10:30am, Session 7 (7 talks)  
10:30-10:45am, Coffee Break  
10:45am-1:02pm Session 8 (8 talks)

Note: Each talk is limited in 17 minutes with Q&A included (14 minutes talk + 3 minutes questions)

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## Session Details

**Session 1: Complexity and Approximation ,  
Time: Dec. 15 9:45-11:45am**

**Chair: Ding-zhu Du (The University of Texas at Dallas, USA)**

- ***Complexity and Enumeration in Models of Genome Rearrangement***,Lora Bailey, Heather Smith Blake, Garner Cochran, Nathan Fox, Michael Levet, Reem Mahmoud, Elizabeth Bailey Matson, Inne Singgih, Grace Stadnyk, Xinyi Wang, Alexander Wiedemann
- ***Conditional automatic complexity and its metrics***,Bjørn Kjos-Hanssen
- ***Streaming and Query Once Space Complexity of Longest Increasing Subsequence***,Xin Li, Yu Zheng
- ***Approximating Decision Trees with Priority Hypotheses***,Jing Yuan, Shaojie Tang
- ***Approximating the  $\lambda$ -low-density Value***,Joachim Gudmundsson, Zijin Huang, Sampson Wong

- **Exponential Time Complexity of the Complex Weighted Boolean #CSP**, Ying Liu
- **Hardness and approximation for the star  $p$ -hub routing cost problem in  $\Delta_\beta$ -metric graphs**, Meng-Shiou Tsai, Sun-Yuan Hsieh, Ling-Ju Hung

## Session 2: Graph Algorithms ,

**Time: Dec. 15 1:15 -3:15pm**

**Chair: Weili Wu (The University of Texas at Dallas, USA)**

- **Linear Time Algorithms for NP-hard Problems restricted to GaTeX Graphs**, Marc Hellmuth, Guillaume Scholz
- **Polynomial Turing Compressions for Some Graph Problems Parameterized by Modular-Width**, Weidong Luo
- **Shortest Longest-Path Graph Orientations**, Yuichi Asahiro, Jesper Jansson, Avraham Melkman, Eiji Miyano, Hirotaka Ono, Quan Xue, Shay Zakov
- **List 3-Coloring on Comb-Convex and Caterpillar-Convex Bipartite Graphs**, Banu Baklan Sen, Öznur Yaşar Diner, Thomas Erlebach
- **Parameterized Algorithms for Cluster Vertex Deletion on Degree-4 Graphs and General Graphs**, Kangyi Tian, Mingyu Xiao, Boting Yang
- **Sum-of-Local-Effects Data Structures for Separable Graphs**, Xing Lyu, Travis Gagie, Meng He, Yakov Nekrich, Norbert Zeh
- **Sink Location Problems in Dynamic Flow Grid Networks**, Yuya Higashikawa, Ayano Nishii, Junichi Teruyama, Yuki Tokuni

## Session 3: Applied Algorithms (1),

**Time: Dec. 15 3:30 -5:47pm**

**Chair: Matthias Gehnen (RWTH Aachen University, Germany)**

- **Variants of Euclidean  $k$ -center Clusterings**, Shin-ichi Nakano
- **Red-black Spanners for Mixed-charging Vehicular Networks**, Sergey Bereg, Yuya Higashikawa, Naoki Katoh, Yuki Tokuni, Binhai Zhu, Junichi Teruyama
- **Self-stabilizing  $(\Delta+1)$ -Coloring in Sublinear (in  $\Delta$ ) Rounds via Locally-iterative Algorithms**, Yitong Yin, Chaodong ZHENG, Xinyu Fu
- **On Detecting Some Defective Items in Group Testing**, Nader Bshouty, Catherine Haddad-Zaknoon
- **An Efficient Data Analysis Method for Big Data using Multiple-Model Linear Regression**, Bohan Lyu, Jianzhong Li
- **Multi-Load Agent Path Finding for Online Pickup and Delivery Problem**, Yifei Li, Hao Ye, Ruixi Huang, Hejiao Huang, Hongwei Du
- **Improved Sourcewise Roundtrip Spanners with Constant Stretch**, Eli Stafford, Chunjiang Zhu
- **Randomized Data Partitioning with Efficient Search, Retrieval and Privacy-Preservation**, Muhammed Kulekci

## Session 4: Applied Algorithms (2),

**Time: Dec. 16 9:45-11:45am**

**Chair: Binhai Zhu (Montana State University , USA)**

- **The  $k$  edge-vertex domination problem**, Peng Li, Xingli Zhou, Zhiang Zhou
- **Resource-Adaptive Newton's Method for Distributed Learning**, Shuzhen Chen, Yuan Yuan, Youming Tao, Zhipeng Cai, Dongxiao Yu
- **DR-submodular Function Maximization with Adaptive Stepsize**, Yanfei Li, Min Li, Qian Liu, Yang Zhou
- **On the Routing Problems in Graphs with Ordered Forbidden Transitions**, Kota Kumakura, Akira Suzuki, Yuma Tamura, Xiao Zhou
- **Delaying Decisions and Reservation Costs**, Elisabet Burjons, Fabian Frei,

Matthias Gehnen, Henri Lotze, Daniel Mock, Peter Rossmanith

- ***A PTAS Framework for Clustering Problems in Doubling Metrics***, Di Wu, Jinhui Xu, Jianxin Wang
- ***A Physical Zero-knowledge Proof for Sumplete, a Puzzle Generated by ChatGPT***, Kyosuke Hatsugai, Kyoichi Asano, Yoshiki Abe

## Session 5: Combinatorics and Algorithms (1)

Time: Dec. 16 1:15 -3:15pm

Chair: Habib M. Ammari (Texas A&M University-Kingsville, USA)

- ***Quantum Query Lower Bounds for Key Recovery Attacks on the Even-Mansour Cipher***, Akinori Kawachi, Yuki Naito
- ***Extended formulations via decision diagrams***, Ryotaro Mitsuboshi, Kohei Hatano, Haruki Hamasaki, Eiji Takimoto, Horakou Rahmanian, Yuta Kurokawa
- ***Greedy Gray codes for Dyck words and ballot sequences***, Dennis Wong, Vincent Vajnovszki
- ***Efficiently-Verifiable Strong Uniquely Solvable Puzzles and Matrix Multiplication***, Matthew Anderson, Vu Le
- ***(min,+) Matrix and Vector Products for Inputs Decomposable into Few Monotone Subsequences***, Andrzej Lingas, Mia Persson
- ***A Sub-quadratic Time Algorithm for Computing the Beacon Kernel of Simple Polygons***, Amirhossein Mozafari, Binay Bhattacharya, Thomas Shermer
- ***An Approach to Agent Path Planning under Temporal Logic Constraints***, Chaofeng Yu, Nan Zhang

## Session 6: Combinatorics and Algorithms (2),

Time: Dec. 16 3:30 -6:04pm

Chair: Guillaume Scholz (Leipzig University, Germany)

- ***The Heterogeneous Rooted Tree Cover Problem***, Pengxiang Pan, Junran Lichen, Ping Yang, Jianping Li
- ***The Hardness of Optimization Problems on the Weighted Massively Parallel Computation Model***, Hengzhao Ma, Jianzhong Li
- ***The Regularized Submodular Maximization via the Lyapunov Method***, Xin Sun, Congying Han, Chenchen Wu, Dachuan Xu, Yang Zhou
- ***Topological network-control games***, Zihui Liang, Bakh Khoussainov, Haidong Yang
- ***Lower Bounds of Functions on Finite Abelian Groups***, Jianting Yang, Ke Ye, Lihong Zhi
- ***A Discharging Method: Improved Kernels for Edge Triangle Packing and Covering***, Zimo Sheng, Mingyu Xiao
- ***Random Shortening of Linear Codes and Applications***, Xue Chen, Kuan Cheng, Xin Li, Songtao Mao
- ***Algorithms for Full-View Coverage of Targets with Group Set Cover***, Jingfang Su, Hongwei Du
- ***Improved bounds for the binary paint shop problem***, Jaroslav Hančl, Adam Kabela, Michal Opler, Jakub Sosnovec, Robert Šámal, Pavel Valtr

## Session 7: Applied Algorithms (3),

Time: Dec. 17 8:30-10:30am

Chair: Thomas Erlebach (Durham University, United Kingdom)

- ***Fitch Graph Completion***, Marc Hellmuth, Peter F. Stadler, Sandhya Thekkumpanan Puthiyaveedu
- ***Deterministic Primal-Dual Algorithms for Online k-way Matching with Delays***, Naonori Kakimura, Tomohiro Nakayoshi
- ***Diversity and freshness-aware regret minimizing set queries***, Hongjie Guo, Jianzhong Li, Fanqian Shen, Hong Gao

Gao, Jianzhong Li, Yangyao Shen, Hong Gao

- ***A Modified EXP3 in Adversarial Bandits with Multi-User Delayed Feedback***, Yandi Li, Jianxiang Guo
- ***Cabbage Can't Always be Transformed into Turnip: Decision Algorithms for Sorting by Symmetric Reversals***, Xin Tong, Ziyi Fang, Haitao Jiang, Lusheng Wang, Binhai Zhu, Daming Zhu, Yixiao Yu
- ***k-median/means with outliers revisited: a simple fpt approximation***, Xianrun Chen, Lu Han, Dachuan Xu, Yicheng Xu, Yong Zhang
- ***A cost-sharing scheme for the k-product facility location game with penalties***, Xiaowei Li, Xiwen Lu

## **Session 8: Algorithms in Networks,**

**Time: Dec. 17 10:45am-1:02pm**

**Chair: Joonglyul Lee (University of North Carolina at Pembroke, USA)**

- ***Maximizing Diversity and Persuasiveness of Opinion Articles in Social Networks***, Liman Du, Wenguo Yang, Suixiang Gao
- ***Stochastic Model for Rumor Blocking Problem in Social Networks under Rumor Source Uncertainty***, Jianming Zhu, Runzhi Li, Smita Ghosh, Weili Wu
- ***Algorithms for Shortest Path Tour Problem in Large-Scale Road Network***, Yucen Gao, Mingqian Ma, Jiale Zhang, Songjian Zhang, Jun Fang, Xiaofeng Gao, Guihai Chen
- ***Solving systems of linear equations through zero forcing sets***, Chao Xu, Siyun Zhou, Jianbo Wang
- ***Profit Maximization for Competitive Influence Spread in Social Networks***, Qiufen Ni, Yun Bai, Zhongzheng Tang
- ***Improved Approximation Algorithms for Multidepot Capacitated Vehicle Routing***, Jingyang Zhao, Mingyu Xiao
- ***On the Minimum Depth of Circuits with Linear Number of Wires Encoding Good Codes***, Andrew Drucker, Yuan Li
- ***Approval-Based Participatory Budgeting with Donations***, Shiwen Wang, Chenhao Wang, Tian Wang, Weijia Jia