# REPORT FROM EATCS JAPAN CHAPTER

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## EATCS-JP/LA Workshop on TCS and Presentation Awards

The 18th *EATCS/LA Workshop on Theoretical Computer Science* was held at Research Institute of Mathematical Sciences, Kyoto University, February 5th to 7th, 2020. (The details can also be found, although this website is written in Japanese, at
`https://la2019.trs.css.i.nagoya-u.ac.jp/winter.php`.)

Every year, we choose the best presenter and the best student presenter. This year, we celebrated the following presentation as the 18th LA/EATCS-Japan Presentation Award:

> "*Time-Optimal Leader Election in Population Protocols*", **Yuichi Sudo** (Osaka University), Fukuhito Ooshita (Nara Institute of Science and Technology), Taisuke Izumi (Nagoya Institute of Technology), Hirotsugu Kakugawa (Ryukoku University), and Toshimitsu Masuzawa (Osaka University)

We celebrated the following presentation as the 9th LA/EATCS-Japan Student Presentation Award:

> "*A generalized matrix-tree theorem for Pfaffian pairs*", **Taihei Oki** (University of Tokyo)

The awards were recognized publicly on the last day, February 7th, 2020.

**Congratulations!**

This workshop is jointly organized by *LA symposium*, Japanese association of theoretical computer scientists. Its purpose is to give a place to discuss topics on all aspects of theoretical computer science. This workshop is an unrefereed meeting. All submissions are accepted for the presentation. There should be no problem of presenting these papers at refereed conferences and/or journals. This meeting is unofficial, familiar, and widely open for everyone who is interested in theoretical computer science. It is held twice a year (January/February and July/August). If you have a chance, I recommend that you attend it. Check the website `http://www.ecei.tohoku.ac.jp/alg/EATCS-J/` for further details. The list of the presentations is as below; you can see the activity of the Japanese society of theoretical computer science.

**Program of EATCS-JP/LA workshop on TCS (February 5–7, 2020)**

In the following program, "*" indicates ordinary speakers, while "**" indicates student speakers. The number [S*xx*] means it is in student session, namely, it is shorter talk than ordinary one.

[S1] Computational complexity of Hednic games on sparse graphs
***Yasuhide Maei , Hironori Kiya (Nagoya University), Tessyu Hanaka (Chuo University), Hirotaka Ono (Nagoya University)*

[S2] The Existence of Pure Nash Equilibrium in Competitive Diffusion Games on Chordal and Related Graphs
***Naoka Fukuzono, Hironori Kiya (Nagoya University), Tesshu Hanaka (Chuo University), Hirotaka Ono (Nagoya University)*

[S3] Cellular Automaton primary rule
***Ryuji Kokawa, Mitsuhiko Fujio (Kindai University)*

[S4] Moon-or-Sun, Nagareru, and Nurimeizu are NP-complete
***Tatsuya Ide, Chuzo Iwamoto (Hiroshima University)*

[S5] Time Bound of Basic Steepest Descent Algorithm for M-convex Function Minimization
***Norito Minamikawa, Akiyoshi Shioura (Tokyo Institute of Technology)*

[S6] Upper and Lower Bounds on the Total Fan-ins of Depth Two Majority Circuit for Majority
***Takuya Yokokawa, Yasuhiro Ojima, Kazuyuki Amano (Gunma University)*

[S7] Wireless Autonomous Robot Evacuation from Isosceles Triangles
***Keiji Hirao, Hiroshi Fujiwara, Hiroaki Yamamoto (Shinshu University)*

[S8] Margin maximization over ZDD-compressed data
***Yuta Kurokawa, Kohei Hatano, Eiji Takimoto (Kyushu University)*

[S9] Design of Optimal Online Bin Packing Algorithms Using Linear Optimization
***Daiki Takizawa, Hiroshi Fujiwara, Hiroaki Yamamoto (Shinshu University)*

[S10] Graph partitioning problems parameterized by vertex integrity
***Tatsuya Gima (Kumamoto University), Tesshu Hanaka (Chuo University), Masashi Kiyomi (Yokohama City University), Yasuaki Kobayashi (Kyoto University), Yota Otachi (Kumamoto University)*

[S11] On the regularity preservation property of register pushdown systems
***Ryoma Senda (Nagoya University), Yoshiaki Takata (Kochi University of Technology ), Hiroyuki Seki (Nagoya University)*

[S12] Software Model Checking for Verifying Real-time Properties of Embedded Assembly Program Based on Lazy Abstraction and Refinement
***Hiromu Kamide, Satoshi Yamane (Kanazawa University)*

[S13] Computing Cover Arrays of General Strings
***Natsumi Kikuchi, Diptarama Hendrian, Ryo Yoshinaka, Ayumi Shinohara (Tohoku University)*

[S14] Exact algorithms for the repetition free longest common subsequence problem
***Tadatoshi Utashima (Kyushu Institute of Technology), Yuichi Asahiro (Kyushu Sangyo University), Jesper Janson (The Hong Kong Polytechnic University), Guohui Lin (University of Alberta), Eiji Miyano (Kyushu Institute of Technology), Hirotaka Ono (Nagoya University)*

[S15] Quantum algorithms for k-XOR problem on random functions

***Takenori Nakagawa, Ryuhei Mori (Tokyo Institute of Technology)*

[1] Game-Theoretically Secure Message Transmission against Adversaries who Corrupt All Channels

**Kenji Yasunaga (Osaka University), Takeshi Koshiba (Waseda University)*

[2] Securely Computing the n-Variable Equality Function with 2n Cards

***Suthee Ruangwises, Toshiya Itoh (Tokyo Institute of Technology)*

[3] Information-Theoretic Lower Bounds on Private Simultaneous Messages and Conditional Disclosure of Secrets

**Akinori Kawachi (Mie University), Maki Yoshida (National Institute of Information and Communications Technology)*

[4] Cryptography in Log-Depth Circuits with Constant Fan-In

***Shohei Egashira (Tokyo Institute of Technology), Yuyu Wang (University of Electronic Science and Technology of China), Keisuke Tanaka (Tokyo Institute of Technology)*

[5] Computational principle for tandem internal models in the cerebellum

**Takeru Honda (Tokyo Metropolitan Institute of Medical Science)*

[6] Computational complexity of the reconfiguration problem of integer linear systems

**Kei Kimura (Saitama University), Akira Suzuki (Tohoku University)*

[7] A refinement of Bell's inequality vs. quantum mechanics argument by algorithmic randomness

**Kohtaro Tadaki (Chubu University)*

[8] Formally verified computable analysis and exact real computation

*Michal Konečný (Aston University), Florian Steinberg (INRIA, Saclay), *Holger Thies (Kyushu University)*

[9] Computational Complexity of Whitelist Ordering Problem

**Takashi Harada (Kochi University of Technology), Ken Tanaka (Kanagawa University), Kenji Mikawa (Niigata University)*

[10] Enumeration, Random Sampling, and Optimization of Connected Crossing-free Geometric Graphs

***Yu Nakahata (Kyoto University), Takashi Horiyama (Hokkaido University), Shin-ichi Minato (Kyoto University), Katsuhisa Yamanaka (Iwate University)*

[11] A generalized matrix-tree theorem for Pfaffian pairs

***Taihei Oki (University of Tokyo)*

[12] Nearly Optimal Average-Case Complexity of Counting BicliquesUnder SETH

***Nobutaka Shimizu (The University of Tokyo), Shuichi Hirahara (National Institute of Informatics)*

[13] Computational Complexity of the Chromatic Art Gallery Problem for Orthogonal Polygons

**Chuzo Iwamoto, Tatsuaki Ibusuki (Hiroshima University)*

[14] On a,b-minimal separators in the covering relation

**Koichi Yamazaki (Gunma University)*

[15] Efficient Enumeration of Minimal Multiway Cuts in Graphs

***Kazuhiro Kurita (Hokkaido University), Yasuaki Kobayashi (Kyoto University)*

[16] Packing disjoint A-paths with fixed length

*Rémy Belmonte (The University of Electro-Communications), Tesshu Hanaka (Chuo University), **Masaaki Kanzaki (Kumamoto University), Masashi Kiyomi (Yokohama City University), Yasuaki Kobayashi, Yusuke Kobayashi (Kyoto University), Michael Lampis (Universite Paris Dauphine), Hirotaka Ono (Nagoya University), Yota Otachi (Kumamoto University)*

[17] Oracle-based analyses for two-player imperfect TANHINMIN
***Hironori Kiya (Nagoya University), Katsuki Ohto (Independent Researcher), Hirotaka Ono (Nagoya University)*

[18] An Envy-free and Truthful Mechanism for the Cake-cutting Problem
**Takao Asano, Hiroyuki Umeda (Chuo University)*

[19] Time-optimal Leader Election in Population Protocols
**Yuichi Sudo (Osaka University), Fukuhito Ooshita (Nara Institute of Science and Technology), Taisuke Izumi (Nagoya Institute of Technology), Hirotsugu Kakugawa (Ryukoku University), Toshimitsu Masuzawa (Osaka University)*

[20] Plane formation by oblivious asynchronous mobile robots
**Yukiko Yamauchi (Kyushu University)*

[21] Efficient Algorithm for Dodecahedron Folding
***Tonan Kamata, Ryuhei Uehara (Japan Advanced Institute of Science and Technology), Takashi Horiyama (Hokkaido University)*

[22] Parallel algorithm for the order-preserving pattern matching
***Davaajav Jargalsaikhan, Diptarama Hendrian, Ryo Yoshinaka, Ayumi Shinohara (Tohoku University)*

[23] A substring-substring LCS length data structure
**Yoshifumi Sakai (Tohoku University)*

[24] Graph Indexing Structure for Parameterized Pattern Matching
***Katsuhito Nakashima (Tohoku University), Noriki Fujisato (Kyushu University), Diptarama Hendrian (Tohoku University), Yuto Nakashima (Kyushu University), Ryo Yoshinaka (Tohoku University), Shunsuke Inenaga, Hideo Bannai (Kyushu University), Ayumi Shinohara (Tohoku University), Masayuki Takeda (Kyushu University)*

[25] Equidistant subsequence pattern matching based on convolutions and bit-parallelism
***Mitsuru Funakoshi, Yuto Nakashima, Shunsuke Inenaga, Hideo Bannai, Masayuki Takeda (Kyushu University)*

[26] Fully-online construction of indexing structures for multiple texts
*Takuya Takagi (Fujitsu Laboratories), *Shunsuke Inenaga (Kyushu University), Hiroki Arimura (Hokkaido University), Dany Breslauer (Independent Researcher), Diptarama Hendrian (Tohoku University)*

# Forthcoming Events

### AAAC 2020

Annual Meeting of the Asian Association for Algorithms and Computation (AAAC) aims at promoting collaborations in theoretical computer science in Asia (but not restricted in the region). The date of the 13th edition of this meeting has changed and it will be held in Nara Kasugano International Forum IRAKA, Nara, Japan from September 24 to 26, 2020. See `http://www.al.ics.saitama-u.ac.jp/aaac2020/` for more information on AAAC 2020.

**ICDCN 2021**

International Conference on Distributed Computing and Networking (ICDCN) is a leading forum dedicated to advances in distributed computing and communication networks. The 22nd edition of this conference will be held in Nara Kasugano International Forum IRAKA, Nara, Japan from January 5 to 8, 2021.

See http://www.icdcn2021.net for more information on ICDCN 2021.

## EATCS Japan Chapter

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