

# REPORT FROM THE JAPANESE CHAPTER

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

The eleventh *EATCS/LA Workshop on Theoretical Computer Science* was held at Research Institute of Mathematical Sciences, Kyoto University, January 28 to January 30, 2013. **Dr. Takayuki Kihara** (Japan Advanced Institute of Science and Technology) who presented the following paper, was selected at the eleventh EATCS/LA Presentation Award.

*An application of Computability Theory to the decomposability problem on Borel functions* by Takayuki Kihara (JAIST).

The award will be given him at the Summer LA Symposium held in July 2013.

We also established another presentation award, named “EATCS/LA Student Presentation Award” to encourage students. This time two students, **Mr. Yuji Mihara** (Kyushu University) and **Mr. Hiroyuki Ota** (The University of Tokyo), were selected at the second EATCS/LA Student Presentation Award. They gave the following papers:

*Randomized Approximate Counting of Forests and Connected Spanning Subgraphs*, by Yuji Mihara, Yukiko Yamauchi, Shuji Kijima, and Masafumi Yamashita (Kyushu University).

*Relativizing Log-space Oracle Hierarchy*, by Hiroyuki Ota and Akitoshi Kawamura (The University of Tokyo).

The award has been given them at the last day, January 30, 2013.

*Congratulations!*

This workshop is jointly organized with *LA Symposium*, Japanese association of theoretical computer scientists. This symposium has been held since 1970. Its purpose is to give a place for discussing topics on all aspects of theoretical computer science. That is, this workshop is an unrefereed meeting. All submissions are accepted for the presentation. There should be no problem of presenting these papers in refereed conferences and/or journals. We hold it twice a year (January/February, and July/August). If you have a chance, I recommend you to attend it. You can find the program of the last workshop in Appendix of this report.

## New TCS Project in Japan

This year, we are glad to announce that two relatively big projects on TCS have been awarded, their main bodies are from EATCS Japan Chapter. One is ELC

Project (Exploring the Limits of Computation, P.I. Osamu Watanabe, 2012–2016) and another is JST ERATO Kawarabayashi Large Graph Project (P.I. Kenichi Kawarabayashi, 2012–2016). Both are planning various research activities including organizing workshops, inviting researchers (short/long, young/senior), publishing extended surveys, hosting major conferences, etc. Please join us with these activities and visit us, Japan!

### Appendix: Program of EATCS-JP/LA workshop on TCS (January 28 to January 30, 2013)

In the following program, each [Sx] means student talk, while [x] means ordinary talk (student talks are shorter). Each “\*\*” indicates a student speaker, and “\*” indicates just a speaker. Talks are given in the following order (some numbers are skipped due to request by presenters):

- [1] Computability of conditional probability  
\*Kenshi Miyabe (*Kyoto University*)
- [2] Randomized Approximate Counting of Forests and Connected Spanning Subgraphs  
\*\*Yuji Mihara, Yukiko Yamauchi, Shuji Kijima, Masafumi Yamashita (*Kyushu University*)
- [3] Isomorphism for graphs of bounded width parameters for strong tree decompositions  
Yota Otachi, \*Pascal Schweitzer (*Japan Advanced Institute of Science and Technology*)
- [4] Linear Time Ranking and Unranking of Derangements  
\*Kenji Mikawa (*Center for Academic Information Service, Niigata University*),  
Ken Tanaka (*Faculty of Science, Kanagawa University*)
- [7] Indexing maximum densities of substrings  
\*Yoshifumi Sakai (*Tohoku University*)
- [S1] Red-Black Grammar Compression Algorithm  
\*\*Makoto Nishida, Tomohiro I, Shunsuke Inenaga, Hideo Bannai, Masayuki Takeda (*Kyushu University*)
- [S2] Lyndon factorization on compressed text  
Tomohiro I, \*\*Yuto Nakashima, Shunsuke Inenaga, Hideo Bannai, Masayuki Takeda (*Kyushu University*)
- [S3] On computing reversed LZ77 factorization online  
\*\*Shiho Sugimoto, Tomohiro I, Shunsuke Inenaga, Hideo Bannai, Masayuki Takeda (*Kyushu University*)
- [S4] Development of Dynamic Hybrid CEGAR Verifier  
\*\*Yanase Ryo, Sakai Tatsunori, Sakai Makoto (*Graduate School of Natural Science and Technology, Kanazawa University*), Yamane Satoshi (*Institute of Science and Engineering, Kanazawa University*)
- [S5] Development of the Probabilistic Timed CEGAR Verification Machine with Java  
\*\*Shuhei KOIKE, Takashi HASEGAWA, Takaya SHIMIZU (*Kanazawa University Graduate School of Natural Science and Technology*), Satoshi YAMANE (*Kanazawa University Faculty of Electrical and Computer Engineering, Institute of Science and Engineering*)

- [9] a Generic Construction for Master Secret Key Leakage-Resilient Identity-Based Encryption  
\*\*Takayuki Otsubo, Manh Ha Nguyen (Tokyo Institute of Technology), Ryo Nishimaki (NTT Secure Platform Laboratories), Keisuke Tanaka (Tokyo Institute of Technology)
- [10] Two-Party Computation and Game Theory  
\*\*Haruna Higo, Keisuke Tanaka (Tokyo Institute of Technology), Kenji Yasunaga (Institute of Systems, Information Technologies and Nanotechnologies)
- [11] Method of Calculation of Importance Degree for Module  
\*Takaaki Goto, Tetsuro Nishino (The University of Electro-Communications), Kensei Tsuchida (Toyo University)
- [14] A note on the expansions of insertion systems  
\*Kaoru Fujioka (Kyushu University)
- [S6] An Analysis of the Width of ZDD Constructed by the Frontier Method  
\*\*Keiji Takano (Tokyo Institute of Technology)
- [S7] Layer Operations in Heterogeneous Multiply Layered Tabular Forms with a Hexadecimal Grid Graph Model  
\*\*Shinji Koka (Nihon University), Koichi Anada (Waseda University Senior High School), Takeo Yaku (Nihon University)
- [S8] Analysis of DNA restoration algorithms  
\*\*ban tomohiro (tokyo institute of technology)
- [S10] Transitivity of Laman Graphs in Distributed System  
\*\*Taufiqurrachman, Yukiko Yamauchi, Shuji Kijima, Masafumi Yamashita (Kyushu University)
- [S11] On graphs with a polynomial number of minimal separators  
Ryosuke Nagasawa, Tatsuya Kato, \*\*Toru Kino, Koichi Yamazaki (Gunma Univ.)
- [S12] Deterministic Random Walks for Irrational Transition Probabilities  
\*\*Takeharu Shiraga, Yukiko Yamauchi, Shuji Kijima, Masafumi Yamashita (Kyushu University)
- [S13] Hitting time and cover time on dynamic graphs  
\*\*Koba Kosuke, Yukiko Yamauchi, Shuji Kijima, Masafumi Yamashita (Kyushu University)
- [S14] A randomized algorithm for comparison between streams  
\*\*Naoto Sonoda, Yukiko Yamauchi, Shuji Kijima, Masafumi Yamashita (Kyushu University)
- [S15] Uncapacitated Single Allocation Hub Location Problem  
\*\*Ryuta Ando (Chuo University)
- [S16] A Fourier-analytic approach to list-decoding for sparse random linear codes  
\*\*Ikko Yamane, Akinori Kawachi (Tokyo Institute of Technology)
- [15] Tight Analysis of Priority Queuing for Egress Traffic  
Koji Kobayashi (National Institute of Informatics), \*Jun Kawahara (Japan Science and Technology Agency), Tomotaka Maeda (Kyoto University)
- [16] Combinatorial prediction using offline algorithm  
\*\*Takahiro Fujita, Kohei Hatano, Eiji Takimoto (Kyushu University)
- [17] Faster Exact Algorithms for Hybridization Number and rSPR Distance  
\*Zhi-Zhong Chen (Tokyo Denki University), Lusheng Wang (City University of Hong Kong)
- [S17] Touch typing trainer system

- \*\*Aruga Isao (Chuo University)*
- [S19] Physical zero-knowledge proof systems for instant insanity  
*\*\*Keisuke Ueda (Osaka Prefecture University), Harumichi Nishimura (Nagoya University)*
- [S18] The adjustment system of musical playback time adapted for user's preference  
*\*\*Takuro Hidaka (Chuo University)*
- [S20] Threshold Circuits for Computing the  $P_n^D$  Function  
*\*\*Daiki Yashima (Graduate School of Information Sciences, Tohoku University), Kei Uchizawa (Graduate School of Science and Engineering, Yamagata University), Xiao Zhou (Graduate School of Information Sciences, Tohoku University)*
- [S21] Energy-Efficient Threshold Circuits Detecting Global Pattern in 1-Dimensional Arrays  
*\*\*Akira Suzuki (Graduate School of Information Sciences, Tohoku University), Kei Uchizawa (Graduate School of Science and Engineering, Yamagata University), Xiao Zhou (Graduate School of Information Sciences, Tohoku University)*
- [18] An application of Computability Theory to the decomposability problem on Borel functions  
*\*Takayuki Kihara (Japan Advanced Institute of Science and Technology)*
- [19] On representations of analytic functions and polynomial-time computability of operators  
*\*Akitoshi Kawamura (University of Tokyo), Martin Ziegler (Technische Universität Darmstadt), Norbert Müller (Universität Trier), Carsten Rösnick (Technische Universität Darmstadt)*
- [20] Relativizing Log-space Oracle Hierarchy  
*\*\*Hiroyuki Ota, Akitoshi Kawamura (The University of Tokyo)*
- [21] On 2-neighborhood CA with discontinuous inverse transition relation  
*\*Shuichi Inokuchi (Kyushu University), Toshikazu Ishida (Kyushu Sangyo University), Yasuo Kawahara (Kyushu University)*
- [22] Gliders flying over the Penrose tiling  
*\*\*Yasuyuki Tsukamoto, Yuhei Miyazaki, Hideki Tsuiki (Kyoto University)*
- [23] Information Theory of Cellular Automata  
*\*Hidenosuke Nishio (Kyoto University), Thomas Worsch (Karlsruhe University)*
- [24] Reversible multi-head finite automata and space-bounded Turing machines  
*\*Kenichi Morita (Hiroshima University)*

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## THE JAPANESE CHAPTER

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