

Taiki Todo

Updated on July 30, 2021

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Short Biography

Taiki Todo is an associate professor of the faculty of information science and electrical engineering (ISEE), Kyushu University. He obtained masters and Ph.D. degrees of information science at kyushu university, in 2010 and 2012, respectively. His main research field is multi-agent systems, a subfield of artificial intelligence. His research interest lies at the intersection between computer science and game theory. More specifically, he is working on the theory of mechanism design, i.e., designing incentive mechanisms for various market situations such as auctions, barter exchange, school choice and voting. He is serving as a senior program committee member of both AAI'21 and IJCAI'21, invited to give an Early Career Spotlight Talk at IJCAI-PRICAI'20, and selected as a Senior Member of IPSJ in 2020.

Personal Information

Gender	Male	Date of Birth	May 31, 1986
Nationality	Japan	Place of Birth	Oita Prefecture, Japan
Residency	Tokyo Metropolis, Japan	Marital Status	Married

Working Experiences

- Jul 2021 – present **Associate Professor**, *Kyushu University*, Fukuoka, Japan.
- Dec 2013 – Jun 2021 **Assistant Professor**, *Kyushu University*, Fukuoka, Japan.
- Jun 2017 – Mar 2020 **Visiting Scientist**, *Multi-Agent Optimization Team, RIKEN AIP*, Tokyo, Japan.
Hosted by Atsushi Iwasaki
- Sep 2016 – Aug 2017 **Invited Professor**, *LAMSADE, Paris-Dauphine University*, Paris, France.
Hosted by Jérôme Lang and Julien Lesca
- Sep 2016 – Feb 2017 **Visiting Scholar**, *City University of Hong Kong*, Hong Kong SAR, China.
Hosted by Minming Li
- Oct 2015 – Dec 2015 **Visitor**, *University of Adelaide*, South Australia, Australia.
Hosted by Mingyu Guo
- Mar 2015 – Apr 2015 **Visitor**, *University of Adelaide*, South Australia, Australia.
Hosted by Mingyu Guo
- Apr 2013 – Nov 2013 **Postdoctoral Researcher**, *Kyushu University*, Fukuoka, Japan.
Hosted by Makoto Yokoo
- Apr 2012 – Mar 2013 **Postdoctoral Associate**, *Duke University*, North Carolina, US.
Hosted by Vincent Conitzer

Apr 2010 – Mar 2013 **JSPS Research Fellow (DC1 - PD)**, *Kyushu University*, Fukuoka, Japan.
Hosted by Makoto Yokoo

Education

Apr 2010 – Mar 2012 **Ph.D.**, *Department of Informatics*, Graduate School of Information Science and Electrical Engineering (ISEE), Kyushu University, Fukuoka, Japan.
Dissertation Title: Toward Characterization of False-name-proof Mechanisms under Cardinal Utility

Thesis Committee: Makoto Yokoo, Masafumi Yamashita, Tsunenori Mine
External Committee: Daisuke Oyama (The University of Tokyo)

Apr 2008 – Mar 2010 **M.Sc.**, *Department of Intelligent Systems*, Graduate School of Information Science and Electrical Engineering (ISEE), Kyushu University, Fukuoka, Japan.

Apr 2005 – Mar 2008 **Undergrad.**, *Department of Electrical Engineering and Computer Sciences*, School of Engineering, Kyushu University, Fukuoka, Japan.

Apr 2002 – Mar 2005 **High School Student**, Taketa High School, Oita, Japan.

Research Interests and Keywords

Algorithm Design, Algorithmic Game Theory, Auction Theory, Matching, Mechanism Design, Social Choice Theory

Memberships

International AAAI, ACM
Japan JSAI, IPSJ, JSSST

Honors and Awards

Sep 2020 **Senior Member**, *Information Processing Society of Japan (IPSJ)*.

Jul 2020 **Selected as Trainee**, *SENTAN-Q – Kyushu University Diversity and Super-Global Training Program for Female and Young Faculty*.

Sep 2019 **JAWS 2019 Best Paper Award**, *Joint Agent Workshop & Symposium 2019 (JAWS 2019)*.

Ryoji Wada, Kentaro Yahiro, Taiki Todo, Makoto Yokoo. School Choice Mechanism with Partial Preferences

Sep 2019 **JAWS 2019 Paper Award**, *JAWS 2019*.

Takehiro Kawasaki, Seiji Takanashi, Taiki Todo, Makoto Yokoo. Designing Strategy-Proof and Non-Wasteful Mechanisms for Auction via Network

Jul 2019 **2019 JSAI Annual Conference Award**, *The 33rd Annual Conference of the Japanese Society for Artificial Intelligence, 2019 (JSAI 2019)*.

Nodoka Okada, Yuho Wada, Taiki Todo, Makoto Yokoo. Mechanism Design for Facility Location via SAT Solving

Jul 2014 **FIT 2014 Funai Best Paper Award**, *The Funai Foundation*.

Shunsuke Tsuruta, Masaaki Oka, Taiki Todo, Yuko Sakurai, Makoto Yokoo. Characterizing False-name-proof Redistribution Mechanisms

Mar 2012 **Elected as Valedictorian of Ph.D. Course Students**, *Kyushu University*.

Jun 2012 **IPSJ 2011 Best Paper Award**, *IPSJ*.

Taiki Todo, Atsushi Iwasaki, Makoto Yokoo. Characterization of False-name-proof Facility Location Mechanisms

- Sep 2011 **FIT 2011 Funai Best Paper Award**, *The Funai Foundation*.
Takayuki Mouri, Toshikazu Sugimachi, Taiki Todo, Atsushi Iwasaki, Makoto Yokoo. A rule extraction algorithm for combinatorial auctions with automated mechanism design
- Sep 2011 **FIT 2010 Young Researcher Award**, *FIT 2010*.
Taiki Todo, Atsushi Iwasaki, Makoto Yokoo. Characterization of False-name-proof Facility Location Mechanisms
- Oct 2010 **iJAWS Best Paper Award**, *iJAWS 2010*.
Taiki Todo, Takayuki Mouri, Atsushi Iwasaki, Makoto Yokoo. False-name-proofness in Online Mechanisms
- Sep 2010 **Nomination for IAT 2010 Best Paper Award**, *IAT 2010*.
Taiki Todo, Atsushi Iwasaki, and Makoto Yokoo. Characterization of revenue monotonicity in combinatorial auctions
- Sep 2010 **FIT 2010 Best Paper Award**, *FIT 2010*.
Taiki Todo, Atsushi Iwasaki, Makoto Yokoo. Characterization of False-name-proof Facility Location Mechanisms
- Sep 2010 **FIT 2010 Best Paper Award**, *FIT 2010*.
Takayuki Mouri, Taiki Todo, Atsushi Iwasaki, Makoto Yokoo. A False-Name-Proof Combinatorial Auction Mechanisms: A Variation of VCG Mechanism
- Apr 2010 **JSPS Research Fellowship**, *JSPS*.
- Mar 2010 **TELECOM System Technology Award for Students**, *The Telecommunications Advancement Foundation*.
- Jan 2010 **2009 Excellent Student Award**, *The IEEE Fukuoka Section*.
Taiki Todo. Characterizing false-name-proof allocation rules in combinatorial auctions
- Sep 2009 **2009 JSAI Annual Conference Award**, *JSAI 2009*.
Taiki Todo, Atsushi Iwasaki, Makoto Yokoo, and Yuko Sakurai. Characterizing false-name-proof allocation rules in combinatorial auctions
- May 2009 **Nomination for AAMAS 2009 Pragnesh Jay Modi Best Student Paper Award**, *AAMAS 2009*.
Taiki Todo, Atsushi Iwasaki, Makoto Yokoo, and Yuko Sakurai. Characterizing false-name-proof allocation rules in combinatorial auctions
- Apr 2008 **Advanced Placement to Graduate School**, *Graduate School of Information Science and Electrical Engineering, Kyushu University*.
- Apr 2005 – Mar 2010 **Scholarship for Taketa High School Alumni**, *The Satomi Scholarship Foundation*.

Funds/Projects

As Principal Investigator

- Aug 2020 – Jul 2022 **Research on Multi-Agent Systems and Market Design**, *SENTAN-Q – Diversity and Super-Global Training Program for Female and Young Faculty*, Kyushu University, 2M JPY.
- Apr 2020 – Mar 2024 **Mathematical Foundations of Multi-Agent Optimization**, *JSPS Grant-in-Aid for Scientific Research (A)*, JSPS, 34.5M JPY.
- Apr 2017 – Mar 2021 **Proposing Game-Theoretic and Algorithmic Solutions for Generalized Exchange Problems**, *JSPS Grant-in-Aid for Young Scientists (A)*, JSPS, 16.1M JPY.
(Duration Shortened; Conducted till Mar 2020)
- Mar 2017 – Feb 2018 **Designing Optimal Mechanisms for Matching with Constraints**, *FY2016 Research Grant*, The Okawa Foundation for Information and Telecommunications, 2M JPY.

- Apr 2015 – Mar 2016 **Establishing a Theory for Exchange of Multiple Indivisible Goods with Indifferences**, *Microsoft Research CORE11*, Microsoft, 1.76M JPY.
- Apr 2014 – Mar 2016 **A Theory of Algorithm Design with Incentives**, *JSPS Grant-in-Aid for Young Scientists (B)*, JSPS, 1.8M JPY.
- Apr 2010 – Mar 2013 **Foundation of Mechanism Design Technique in Dynamic and Uncertain Environments**, *JSPS Grant-in-Aid for JSPS Fellows*, JSPS, 2.1M JPY.
- As Co-Investigator**
- Nov 2019 – Mar 2020 **Distributed Control for Autonomous Flying Vehicles**, *I&E Collaborative Research Start-Up Grant*, PI: Kaoru Yamamoto, Graduate School of ISEE, Kyushu University.
- Apr 2017 – Mar 2020 **Establishing a Practical Theory of Market Design**, *JSPS Grant-in-Aid for Scientific Research (A)*, PI: Makoto Yokoo, JSPS.
- Dec 2016 – Mar 2020 **Resilient Human-in-the-Loop Multiagent Optimization**, *JST SICORP*, PI: Makoto Yokoo, JST.
- Oct 2014 – Mar 2017 **Interdisciplinary global networks for accelerating theory and practice in software ecosystem**, *JSPS Program for Advancing Strategic International Networks to Accelerate the Circulation of Talented Researchers*, PI: Ken-ichi Matsumoto, JSPS.
- Apr 2014 – Mar 2016 **Foundation of Parametric Mechanism Design Technique via Quantifier Elimination**, *JSPS Grant-in-Aid for Challenging Exploratory Research*, PI: Makoto Yokoo, JSPS.
- Apr 2014 – Mar 2017 **Establishing Theory of Resource Allocation Mechanism Design for Sustainable Development**, *JSPS Grant-in-Aid for Scientific Research (S)*, PI: Makoto Yokoo, JSPS.

Selected Professional Services

- Community Services JSSST Special Interest Group on Multi-Agent and Cooperative Computation (Liaison Planning Committee; Apr 2019 – present)
- Organizer etc. JSAI 2021 (Student Session Vice-Chair; June 2021)
 JSSST 2020 (Vice Local Chair; September 2020)
 JSAI 2020 (PC member, Student Session Vice-Chair; June 2020)
 JSAI-2018 Special Session “Incentive Design Science” (Organizer; Jun. 2018)
 PRIMA 2018 (Finance Chair; Oct. 2018)
 JAWS 2018 (Program Chair; Sep. 2018)
 JAWS 2017 (Game Theory Session Chair; Sep. 2017)
 JSSST 2017 (Demo & Poster Session Chair; Sep. 2017)
 The Seventh International Workshop on Empirical Software Engineering in Practice (Special Focus Program Co-Chair; Mar. 2016)
 The Third/Fourth International Workshop on Market Design Technologies for Sustainable Development (Advisory Board Member; Aug. 2015, Aug. 2016)
 IJCAI-15 Workshop on Innovative Application of Game Theory and Market Design (Co-Organizer; Jul. 2015)
 The First/Second International Workshop on Market Design Technologies for Sustainable Development (Co-Organizer; Nov. 2013, Aug. 2014)
- Senior PC Member AAAI-22, IJCAI-21, AAAI-21, AAMAS-20, AAAI-20, AAMAS-19

PC Member	IJCAI-22, AAMAS-22, AAMAS-21, AAAI-21 Student Abstract and Poster Program, IJCAI-PRICAI-20, ECAI-20, AAAI-20 Student Abstract and Poster Program, IJCAI-19, IJCAI-ECAI-18, AAMAS-18, AAAI-18, AMEC/TADA-17, AAMAS-17, AAAI-17, AMEC/TADA-16, AAMAS-16, AAAI-16, IJCAI-15, AMEC/TADA-15, AAMAS-15, AAAI-15, EC-14, AMEC/TADA-14, AAMAS-14, IJCAI-13, AAMAS-13
Journal Reviewer	Artificial Intelligence (AIJ), Journal of Artificial Intelligence Research (JAIR), Autonomous Agents and Multi-Agent Systems (JAAMAS), Mathematical Social Sciences (MSS), Information Processing Letters (IPL), Journal of Information Processing (JIP), Pacific Journal of Mathematics for Industry (PJMI), New Generation Computing (NGC), Social Choice and Welfare (SCW), Expert Systems With Applications (ESWA)
Subreviewer	FOCS-20, SODA-20, WINE-16, PRIMA-13

Articles (in Journals and Archival Proceedings)

- [1] Taiki Todo, Ryoji Wada, Kentaro Yahiro, and Makoto Yokoo. **Lazy Gale-Shapley for Many-to-One Matching with Partial Information.** In *Proceedings of the Seventh International Conference on Algorithmic Decision Theory (ADT 2021), Toulouse, France*, pages XXX–YYY, November 2021.
- [2] Zhaohong Sun, Taiki Todo, and Makoto Yokoo. **New Algorithms for Japanese Residency Matching.** In *Proceedings of the Thirtieth International Joint Conference on Artificial Intelligence (IJCAI 2021), Montreal, Canada*, pages XXX–YYY, August 2021.
- [3] Zhaohong Sun, Taiki Todo, and Toby Walsh. **Fair Pairwise Exchange among Groups.** In *Proceedings of the Thirtieth International Joint Conference on Artificial Intelligence (IJCAI 2021), Montreal, Canada*, pages XXX–YYY, August 2021.
- [4] Takehiro Kawasaki, Ryoji Wada, Taiki Todo, and Makoto Yokoo. **Mechanism Design for Housing Markets over Social Networks.** In *Proceedings of the Twentieth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2021), Southampton, UK*, pages 692–700, May 2021.
- [5] Taiki Todo and Makoto Yokoo. **Split Manipulations in Cost Sharing of Minimum Cost Spanning Tree.** In *Proceedings of the Twenty-Fourth European Conference on Artificial Intelligence (ECAI 2020), Santiago de Compostela, Spain*, pages 219–226, June 2020.
- [6] Taiki Todo, Nodoka Okada, and Makoto Yokoo. **False-Name-Proof Facility Location on Discrete Structures.** In *Proceedings of the Twenty-Fourth European Conference on Artificial Intelligence (ECAI 2020), Santiago de Compostela, Spain*, pages 227–234, June 2020.
- [7] Takehiro Kawasaki, Nathanaël Barrot, Seiji Takanashi, Taiki Todo, and Makoto Yokoo. **Strategy-Proof and Non-Wasteful Multi-Unit Auction via Social Network.** In *Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020), New York, New York, US*, pages 2062–2069, February 2020.
- [8] Taiki Todo, Atsushi Iwasaki, and Makoto Yokoo. **Competitive Auctions and Envy-Freeness for Group of Agents.** In *Proceedings of the 25th International Computing and Combinatorics Conference (COCOON 2019), Xi'an, China*, pages 541–553, July 2019.

- [9] Nodoka Okada, Taiki Todo, and Makoto Yokoo. **SAT-Based Automated Mechanism Design for False-Name-Proof Facility Location**. In *Proceedings of the 22nd International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2019), Torino, Italy*, pages 321–337, October 2019.
- [10] Ilan Nehama, Taiki Todo, and Makoto Yokoo. **Manipulations-resistant facility location mechanisms for ZV-line graphs**. In *Proceedings of the Eighteenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2019), Montreal, Canada*, pages 1452–1460, May 2019.
- [11] Yuho Wada, Taiki Todo, and Makoto Yokoo. **Facility Location with Variable and Dynamic Populations**. In *Proceedings of the Seventieth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2018), Stockholm, Sweden*, pages 336–344, July 2018.
- [12] Julien Lesca and Taiki Todo. **Service Exchange Problem**. In *Proceedings of the 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence (IJCAI-ECAI 2018), Stockholm, Sweden*, pages 354–360, July 2018.
- [13] Takamasa Ihara, Shunsuke Tsuruta, Taiki Todo, Yuko Sakurai, and Makoto Yokoo. **Strategy-proof Cake Cutting Mechanisms for All-or-nothing Utility**. *Fundamenta Informaticae (FUIN)*, 158(1-3):41–61, February 2018.
- [14] Etsushi Fujita, Julien Lesca, Akihisa Sonoda, Taiki Todo, and Makoto Yokoo. **A Complexity Approach for Core-Selecting Exchange under Conditionally Lexicographic Preferences**. *Journal of Artificial Intelligence Research (JAIR)*, 63:515–555, November 2018.
- [15] Ken Chi Kit Fong, Minming Li, Pinyan Lu, Taiki Todo, and Makoto Yokoo. **Facility Location Game with Fractional Preferences**. In *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence (AAAI 2018), New Orleans, Louisiana, US*, pages 1039–1046, February 2018.
- [16] Tomohiro Ono, Taiki Todo, and Makoto Yokoo. **Rename and False-Name Manipulations in Discrete Facility Location with Optional Preferences**. In *Proceedings of the 20th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2017), Nice, France*, pages 163–179, October 2017.
- [17] Yuto Tominaga, Taiki Todo, and Makoto Yokoo. **Manipulations in Two-Agent Sequential Allocation with Random Sequences**. In *Proceedings of the Fiftieth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2016), Singapore, Singapore*, pages 141–149, May 2016.
- [18] Akihisa Sonoda, Taiki Todo, and Makoto Yokoo. **False-name-proof Locations of Two Facilities: Economic and Algorithmic Approaches**. In *Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence (AAAI 2016), Phoenix, Arizona, US*, pages 615–621, February 2016.
- [19] Mingyu Guo, Yuko Sakurai, Taiki Todo, and Makoto Yokoo. **Individually Rational Strategy-Proof Social Choice with Exogenous Indifference Sets**. In *Proceedings of the 19th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2016), Phuket, Thailand*, pages 181–196, August 2016.

- [20] Shunsuke Tsuruta, Masaaki Oka, Taiki Todo, Yuko Sakurai, and Makoto Yokoo. **Fairness and False-Name Manipulations in Randomized Cake Cutting.** In *Proceedings of the Fourteenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2015)*, Istanbul, Turkey, pages 909–917, May 2015.
- [21] Zhaohong Sun, Hideaki Hata, Taiki Todo, and Makoto Yokoo. **Exchange of Indivisible Objects with Asymmetry.** In *Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence (IJCAI 2015)*, Buenos Aires, Argentina, pages 97–103, July 2015.
- [22] Atsushi Iwasaki, Etsushi Fujita, Taiki Todo, Hidenao Iwane, Hirokazu Anai, Mingyu Guo, and Makoto Yokoo. **Parametric Mechanism Design via Quantifier Elimination (Extended Abstract).** In *Proceedings of the Fourteenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2015)*, Istanbul, Turkey, pages 1885–1886, May 2015.
- [23] Takamasa Ihara, Shunsuke Tsuruta, Taiki Todo, Yuko Sakurai, and Makoto Yokoo. **Strategy-proof Cake Cutting with the All-or-nothing Utility.** In *Proceedings of the Eighteenth Conference on Principles and Practice of Multi-agent Systems (PRIMA 2015)*, Bertinoro, Italy, pages 118–133, October 2015.
- [24] Hideaki Hata, Taiki Todo, Saya Onoue, and Kenichi Matsumoto. **Characteristics of Sustainable OSS Projects: A Theoretical and Empirical Study.** In *Proceedings of the Eighth ACM/IEEE International Workshop on Cooperative and Human Aspects of Software Engineering (CHASE 2015)*, Florence, Italy, pages 15–21, May 2015.
- [25] Mingyu Guo, Hong Shen, Taiki Todo, Yuko Sakurai, and Makoto Yokoo. **Social Decision with Minimal Efficiency Loss: An Automated Mechanism Design Approach.** In *Proceedings of the Fourteenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2015)*, Istanbul, Turkey, pages 347–355, May 2015.
- [26] Etsushi Fujita, Julien Lesca, Akihisa Sonoda, Taiki Todo, and Makoto Yokoo. **A Complexity Approach for Core-Selecting Exchange with Multiple Indivisible Goods under Lexicographic Preferences.** In *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI 2015)*, Austin, Texas, US, pages 907–913, January 2015.
- [27] Dengji Zhao, Siqi Luo, Taiki Todo, and Makoto Yokoo. **False-name-proof Combinatorial Auction Design via Single-minded Decomposition.** In *Proceedings of the Twenty-First European Conference on Artificial Intelligence (ECAI 2014)*, Prague, Czech Republic, pages 945–950, August 2014.
- [28] Shunsuke Tsuruta, Masaaki Oka, Taiki Todo, Yujiro Kawasaki, Mingyu Guo, Yuko Sakurai, and Makoto Yokoo. **Optimal false-name-proof single-item redistribution mechanisms.** In *Proceedings of the Thirteenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2014)*, Paris, France, pages 221–228, May 2014.
- [29] Taiki Todo, Haixin Sun, and Makoto Yokoo. **Strategyproof Exchange with Multiple Private Endowments.** In *Proceedings of the Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI 2014)*, Québec City, Québec, Canada, pages 805–811, July 2014.

- [30] Akihisa Sonoda, Etsushi Fujita, Taiki Todo, and Makoto Yokoo. **Two Case Studies for Trading Multiple Indivisible Goods with Indifferences.** In *Proceedings of the Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI 2014)*, Québec City, Québec, Canada, pages 791–797, July 2014.
- [31] Masaaki Oka, Taiki Todo, Yuko Sakurai, and Makoto Yokoo. **Predicting Own Action: Self-Fulfilling Prophecy Induced by Proper Scoring Rules.** In *Proceedings of the Second AAAI Conference on Human Computation and Crowdsourcing (HCOMP 2014)*, Pittsburgh, Pennsylvania, US, pages 184–191, November 2014.
- [32] Julien Lesca, Taiki Todo, and Makoto Yokoo. **Coexistence of utilitarian efficiency and false-name-proofness in social choice.** In *Proceedings of the Thirteenth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2014)*, Paris, France, pages 1201–1208, May 2014.
- [33] Taiki Todo and Vincent Conitzer. **False-name-proof matching.** In *Proceedings of the Twelfth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2013)*, Saint Paul, MN, USA, pages 311–318, May 2013.
- [34] Atsushi Iwasaki, Etsushi Fujita, Taiki Todo, Miao Yao, and Makoto Yokoo. **VCG-equivalent in expectation mechanism: general framework for constructing iterative combinatorial auction mechanisms.** In *Proceedings of the Twelfth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2013)*, Saint Paul, MN, USA, pages 699–706, May 2013.
- [35] Taiki Todo, Takayuki Mouri, Atsushi Iwasaki, and Makoto Yokoo. **False-name-proofness in online mechanisms.** In *Proceedings of the Eleventh International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2012)*, Valencia, Spain, pages 753–762, June 2012.
- [36] Taiki Todo, Runcong Li, Xuemei Hu, Takayuki Mouri, Atsushi Iwasaki, and Makoto Yokoo. **Generalizing Envy-Freeness toward Group of Agents.** In *Proceedings of the Twenty-Second International Joint Conference on Artificial Intelligence (IJCAI 2011)*, Barcelona, Catalonia, Spain, pages 386–392, July 2011.
- [37] Taiki Todo, Atsushi Iwasaki, and Makoto Yokoo. **False-name-proof mechanism design without money.** In *Proceedings of the Tenth International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2011)*, Taipei, Taiwan, pages 651–658, May 2011.
- [38] Taiki Todo, Atsushi Iwasaki, and Makoto Yokoo. **Characterization of Revenue Monotonicity in Combinatorial Auctions.** In *Proceedings of the 2010 IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT 2010)*, Toronto, Canada, pages 383–390, August 2010.
- [39] Atsushi Iwasaki, Vincent Conitzer, Yoshifusa Omori, Yuko Sakurai, Taiki Todo, Mingyu Guo, and Makoto Yokoo. **Worst-case efficiency ratio in false-name-proof combinatorial auction mechanisms.** In *Proceedings of the Ninth International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2010)*, Toronto, Canada, pages 633–640, May 2010.
- [40] Taiki Todo, Atsushi Iwasaki, Makoto Yokoo, and Yuko Sakurai. **Characterizing false-name-proof allocation rules in combinatorial auctions.** In *Proceedings of the Eighth International Joint Conference on Autonomous Agents*

and Multiagent Systems (AAMAS 2009), Budapest, Hungary, pages 265–272, May 2009.

Surveys and Reports

- 2021 **Mechanism Design with Uncertainty**, *In Proc. IJCAI-PRICAI 2020*, January, 2021.
<https://www.ijcai.org/Proceedings/2020/730>
- 2019 **AAMAS-2019 Report**, *Journal of the Japanese Society of Artificial Intelligence (JSAI)*, September, 2019 (in Japanese).
- 2018 **JSAI-2018 Special Session “Incentive Design Science”**, *Journal of the Japanese Society of Artificial Intelligence (JSAI)*, jointly with Yuko Sakurai, November, 2018 (in Japanese).
- 2013 **Research Life in Duke University**, *Journal of the Japanese Society of Artificial Intelligence (JSAI)*, November, 2013 (in Japanese).
- 2013 **Overview of Studies on Game Theory and Mechanism Design**, *Journal of the Japanese Society of Artificial Intelligence (JSAI) 28(3): 389-396*, jointly with Atsushi Iwasaki, May, 2013 (in Japanese).
- 2012 **Toward the Foundation of Market Design Theory for the Internet Era**, *Journal of IPSJ*, jointly with Atsushi Iwasaki and Makoto Yokoo, 2012 (in Japanese).
- 2010 **Characterization of false-name-proof social choice mechanisms**, *Proc. AAMAS 2010*, May 2010.

Invited Talks

- 2021 **Mechanism Design for Housing Markets over Social Networks**, *Dagstuhl Seminar 21331: Coalition Formation Games*, Dagstuhl (Online), Germany, August.
(invited participation, talk planned)
- 2021 **Strategic Voting and Single-Peaked Preferences**, *Summer School on Game Theory and Social Choice*, Hong Kong SAR (Online), China, June.
(invited tutorial)
- 2021 **Mechanism Design with Uncertainty**, *IJCAI-PRICAI 2020 Early Career Spotlight Talk*, Kyoto (Online), Japan, January.
- 2020 **Social Choice with Variable Populations**, *PRIMA 2020*, Nagoya (Online), Japan, November.
- 2020 **Algorithmic Game Theory for Designing Voting Rules**, *FIT 2020 Special Session “Computational Approach for Social Choice”*, Hokkaido (Online), Japan, September.
(in Japanese)
- 2019 **Human-in-the-loop Optimization: Stability and Incentives**, *Kyushu University Open Innovation Workshop*, Fukuoka, Japan, November.
(in Japanese, poster presentation)
- 2018 **Market Design for Resource Exchange**, *Interdisciplinary Workshop on Swarm Mathematics (A Scientific Seminar Organized by TOYOTA)*, Nagoya, Japan, November.
(in Japanese)

- 2018 **Game Theory and Market Design**, *The 24th SICE Emergent System Symposium*, Chino, Japan, September.
(in Japanese)
- 2016 **Fairness and False-name-proofness in Randomized Allocation of a Divisible Good**, *Dagstuhl Seminar 16232: Fair Division*, Dagstuhl, Germany, June.
(invited participation)
- 2014 **Two Case Studies for Trading Multiple Indivisible Goods with Indifferences**, *JSSST 2014 Top-Conference Special Talk*, Nagoya, Japan, September.
(in Japanese)
- 2009 **Characterizing false-name-proof allocation rules in combinatorial auctions**, *Hitotsubashi G-COE Conference on Choice, Games, and Welfare 2009: Mechanism Design*, Tokyo, Japan, September.

Other Presentations

- 2019 **Mechanism Design with Uncertainty**, *CS Department Sub-Forum of the Third Mozi Forum*, Hefei, China, April.
- 2016 **Establishing a Theory for Exchange of Multiple Indivisible Goods with Indifferences**, *Microsoft Research Japan-Korea Academic Day 2016*, Tokyo, Japan, May.
- 2015 **False-name-proof Mechanism Design without Money**, *Seminar Presentation at City University of Hong Kong*, Kowloon, Hong Kong SAR, June.
(invited)
- 2015 **Establishing a Theory for Exchange of Multiple Indivisible Goods with Indifferences**, *Microsoft Research Korea-Japan Academic Day 2015*, Seoul, Korea, May.
- 2014 **Trading Multiple Indivisible Goods with Indifferences: Beyond Sönmez's Result**, *AMEC/TADA-14*, Paris, France, May.
- 2014 **A complexity approach for Pareto efficient exchange with multiple indivisible goods**, *Warsaw Workshop on Economic and Computational Aspects of Game Theory and Social Choice*, Warsaw, Poland, March.
- 2013 **Strategy-proof exchange with multiple private endowments**, *The 1st Intl. Workshop on Market Design Technologies for Sustainable Development*, Yokohama, Japan, November.
- 2013 **False-name-proof Matching**, *Duke CS-ECON Seminar*, Durham, NC, US, February.
(invited)
- 2012 **Mechanism Design in Highly Anonymous Environments**, *The 21st Gathering of JSPS Japanese Fellows*, Boston, MA, US, October.
- 2012 **Generalizing Envy-Freeness Toward Group of Agents**, *EC-12*, Valencia, Spain, June.
- 2012 **Envy-Freeness for Groups of Agents: Beyond Single-Minded Domain**, *AMEC-12*, Valencia, Spain, June.
- 2012 **False-name-proof Mechanism Design without Money**, *Duke CS-ECON Seminar*, Durham, NC, US, April.

- 2010 **False-name-proofness in Facility Location Problem on the Real Line**, *WINE-10*, Stanford, CA, US, December.
- 2010 **False-name-proofness in Online Mechanisms**, *iJAWS-10*, Furano, Japan, October.
- 2010 **False-name-proofness in Facility Location Problem on the Real Line**, *Hitotsubashi G-COE Workshop on Choice, Games, and Welfare*, Tokyo, Japan, October.
- 2010 **Characterization of Revenue Monotonicity in Combinatorial Auctions**, *AMEC-10*, Toronto, Canada, May.
- 2010 **Characterization of False-name-proof Social Choice Mechanisms**, *AAMAS-10 Doctoral Mentoring Program*, Toronto, Canada, May.
- 2010 **False-name-proofness in Online Mechanisms**, *COST-ADT Doctoral School on Computational Social Choice*, Estoril, Portugal, April.
- 2009 **Characterization of Strategy-proof, Revenue Monotone Combinatorial Auction Mechanisms and Connection with False-name-proofness**, *WINE-09*, Rome, Italy, December.

Teaching Experiences

Primary Course of Cybersecurity, *Undergraduate Course*, Kyushu University, Spring Quarter 2017, Spring Quarter 2020.

Information Science, *Undergraduate Course*, Kyushu University, Fall Semester 2018, Fall Semester 2019.

Exercise of Formal Language Theory, *Dept. Physics*, Kyushu University, Spring Semester 2016.

Exercise of Information and Logic Programming, *Dept. Physics*, Kyushu University, Spring Semester 2014, Spring Semester 2015.

Basic Experiments for EECS course (as overseer), *Dept. EECS*, Kyushu University, Spring Semester, 2014 – 2021.