



# Taiki Todo

Updated on January 16, 2017

## Personal Information

Gender Male  
Date of Birth May 31, 1986  
Nationality Japan  
Marital Status Married

## Employment

2013– **Assistant Professor**, *Kyushu University*, Japan.  
2016–2017 **Invited Professor**, *LAMSADE, Paris-Dauphine University*, France.  
2016–2017 **Visiting Scholar**, *City University of Hong Kong*, Hong Kong SAR, China.  
2013–2013 **Postdoctoral Researcher**, *Kyushu University*, Japan.  
2012–2013 **Postdoctoral Associate**, *Duke University*, North Carolina, US.  
2010–2013 **JSPS Research Fellow (DC1 - PD)**, *Kyushu University*, Japan.

## Education

2010–2012 **Ph.D.**, *Department of Informatics*, Graduate School of Information Science and Electrical Engineering (ISEE), *Kyushu University*, Japan.  
2008–2010 **MSc.**, *Department of Intelligent Systems*, Graduate School of Information Science and Electrical Engineering (ISEE), *Kyushu University*, Japan.  
2005–2008 **Undergrad.**, *Department of Electrical Engineering and Computer Sciences*, School of Engineering, *Kyushu University*, Japan.

## Doctoral Dissertation

Title *Toward Characterization of False-name-proof Mechanisms under Cardinal Utilities*  
Degree Ph.D.  
Supervisor Prof. Makoto Yokoo (*Kyushu University*, Japan)  
Defense Jan. 30, 2012

Room 825, West 2 Building – Motoooka 744, 819-0395 Fukuoka – Japan

☎ +81 (92) 802 3576 • 📠 +81 (92) 802 3576 • ✉ todo@inf.kyushu-u.ac.jp  
🌐 sites.google.com/site/taikitodo/ • 🐦 weasteria • 🌀 weasteria

---

## Skills

Language	Japanese (native), English (fluent), Chinese (beginner)
Programming	Java/Processing, C++, Python, Scheme, $\LaTeX$
Software	Adobe Illustrator, Microsoft Office, Emacs, gnuplot
OS	Windows, OS X, Ubuntu, Arch Linux

---

## Research Interests

Theory	Algorithm Design, Algorithmic Game Theory, Auction Theory, Matching, Mechanism Design, Social Choice Theory
Application	Crowdsourcing, Mining Software Repositories, Software Engineering, Voting

---

## Honors and Awards

- 2014 **FIT 2014 Funai Best Paper Award**, *The Funai Foundation*.
- 2012 **IPSJ 2011 Best Paper Award**, *IPSJ*.
- 2011 **FIT 2011 Funai Best Paper Award**, *The Funai Foundation*.
- 2011 **FIT 2010 Young Researcher Award**, *FIT 2010*.
- 2010 **iJAWS Best Paper Award**, *iJAWS 2010*.
- 2010 **Nomination for IAT 2010 Best Paper Award**, *IAT 2010*.
- 2010 **FIT 2010 Best Paper Award**, *FIT 2010*.
- 2010 **JSPS Research Fellowship**, *JSPS*.
- 2010 **TELECOM System Technology Award for Students**, *The Telecommunications Advancement Foundation*.
- 2010 **2009 Excellent Student Award**, *The IEEE Fukuoka Section*.
- 2009 **2009 JSAI Annual Conference Award**, *JSAI 2009*.
- 2009 **Nomination for AAMAS 2009 Pragnesh Jay Modi Best Student Paper Award**, *AAMAS 2009*.

---

## Funds/Projects

- 2017–2018 **Designing Optimal Mechanisms for Matching with Constraints**, *FY2016 Research Grant*, PI: Taiki Todo, The Okawa Foundation for Information and Telecommunications.
- 2016–2020 **Resilient Human-in-the-Loop Multiagent Optimization**, *JST SICORP*, PI: Makoto Yokoo, JST.
- 2015–2016 **Establishing a Theory for Exchange of Multiple Indivisible Goods with Indifferences**, *Microsoft Research CORE11*, PI: Taiki Todo, Microsoft.
- 2014–2017 **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.
- 2014–2016 **Foundation of Parametric Mechanism Design Technique via Quantifier Elimination**, *JSPS Grant-in-Aid for Challenging Exploratory Research*, PI: Makoto Yokoo, JSPS.
- 2014–2016 **A Theory of Algorithm Design with Incentives**, *JSPS Grant-in-Aid for Young Scientists (B)*, PI: Taiki Todo, JSPS.

Room 825, West 2 Building – Motooka 744, 819-0395 Fukuoka – Japan

☎ +81 (92) 802 3576 • 📠 +81 (92) 802 3576 • ✉ todo@inf.kyushu-u.ac.jp  
🌐 sites.google.com/site/taikitodo/ • 🐦 weasteria • 🌐 weasteria

- 2014–2017 **Establishing Theory of Resource Allocation Mechanism Design for Sustainable Development**, *JSPS Grant-in-Aid for Scientific Research (S)*, PI: Makoto Yokoo, JSPS.
- 2010–2013 **Foundation of Mechanism Design Technique in Dynamic and Uncertain Environments**, *JSPS Grant-in-Aid for JSPS Fellows*, PI: Taiki Todo, JSPS.

## Professional Services

- Organizer etc. The Seventh International Workshop on Empirical Software Engineering in Practice (Special Focus 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)
- PC member 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), Mathematical Social Sciences (MSS), Information Processing Letters (IPL), Journal of Information Processing (JIP)

## Articles

- [1] Yuto Tominaga, Taiki Todo, and Makoto Yokoo. Manipulations in two-agent sequential allocation with random sequences. In *Proceedings of the Thirtieth International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2016)*, Singapore, Singapore, pages 141–149, May 2016.
- [2] Akihisa Sonoda, Taiki Todo, and Makoto Yokoo. False-name-proof locations of two facilities: Economic and algorithmic approaches. In *Proceedings of the Thirtieth AAI Conference on Artificial Intelligence (AAAI 2016)*, Phoenix, Arizona, US, pages 615–621, February 2016.
- [3] 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.
- [4] 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.
- [5] 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.
- [6] 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.

Room 825, West 2 Building – Motooka 744, 819-0395 Fukuoka – Japan

☎ +81 (92) 802 3576 • 📠 +81 (92) 802 3576 • ✉ todo@inf.kyushu-u.ac.jp  
 🌐 sites.google.com/site/taikitodo/ • 🐦 weasteria • 🌐 weasteria

- [7] 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.
- [8] 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.
- [9] 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.
- [10] 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.
- [11] 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.
- [12] 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.
- [13] 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.
- [14] 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.
- [15] 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.
- [16] 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.
- [17] 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.

Room 825, West 2 Building – Motooka 744, 819-0395 Fukuoka – Japan

☎ +81 (92) 802 3576 • 📠 +81 (92) 802 3576 • ✉ todo@inf.kyushu-u.ac.jp  
 🌐 sites.google.com/site/taikitodo/ • 🐦 weasteria • 🌐 weasteria

- [18] 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.
- [19] 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.
- [20] 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.
- [21] 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.
- [22] 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.
- [23] 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.

---

## Other Presentations

- 2016 **Fairness and False-name-proofness in Randomized Allocation of a Divisible Good**, *Dagstuhl Seminar 16232: Fair Division*, Dagstuhl, Germany, June.
- 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.
- 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.
- 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.

Room 825, West 2 Building – Motooka 744, 819-0395 Fukuoka – Japan

 +81 (92) 802 3576 • 
  +81 (92) 802 3576 • 
  todo@inf.kyushu-u.ac.jp  
 sites.google.com/site/taikitodo/ • 
  weasteria • 
  weasteria

- 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.
- 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.