

Kenjiro Takazawa

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Employment

- ▶ Associate Professor at Department of Industrial and Systems Engineering, Faculty of Science and Engineering, Hosei University, since April 2016.
- ▶ Assistant Professor at Research Institute for Mathematical Sciences, Kyoto University, April 2010–March 2016.
- ▶ JSPS Postdoctoral Fellow for Research Abroad, Hosted by Professor András Sebő, L'équipe Optimisation Combinatoire du Laboratoire G-SCOP, April 2012–March 2014.
- ▶ JSPS Research Fellow (DC1), April 2007–March 2010.

Education

- ▶ Doctor of Information Science and Technology, University of Tokyo, March 2010.
 - Thesis: Combinatorial Algorithms for Generalized Matching Problems.
 - Supervised by Kazuo Murota.
- ▶ Master of Information Science and Technology, University of Tokyo, March 2007.
 - Thesis: A Unified Approach to Combinatorial Algorithms for Matchings and Matroids.
 - Supervised by Satoru Iwata and Kazuo Murota.
- ▶ Bachelor of Engineering, University of Tokyo, March 2005.
 - Thesis: Network Coding by Matrix Completion (in Japanese).
 - Supervised by Kazuo Murota.

Publications

1. Kazuo Murota and Kenjiro Takazawa:
Relationship of two formulations for shortest bibranchings.
 - ▶ *Japan Journal of Industrial and Applied Mathematics*, to appear.
2. Naonori Kakimura, Naoyuki Kamiyama, and Kenjiro Takazawa:
The b -branching problem in digraphs.
 - ▶ *Discrete Applied Mathematics*, **283** (2020), 565–576.
 - ▶ *Proceedings of the 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018)*, *Leibniz International Proceedings in Informatics* **117** (2018), 12:1–12:15.
3. Masamune Kawasaki and Kenjiro Takazawa:
Improving approximation ratios for the clustered traveling salesman problem.
 - ▶ *Journal of the Operations Research Society of Japan*, **63** (2020), 60–70.
4. Satoru Fujishige, Kenjiro Takazawa, and Yu Yokoi:
A note on a nearly uniform partition into common independent sets of two matroids.
 - ▶ *Journal of the Operations Research Society of Japan*, **63** (2020), 71–77.

5. Kenjiro Takazawa:
Notes on equitable partitions into matching forests in mixed graphs and into b -branchings in digraphs.
 - *Proceedings of the 6th International Symposium on Combinatorial Optimization (ISCO 2020)*, *Lecture Notes in Computer Science*, **12176** (2020), 214–224.
 - arXiv:2003.10774, 2020.
6. Yuni Iwamasa and Kenjiro Takazawa:
Optimal matroid bases with intersection constraints: Valuated matroids, M -convex functions, and their applications.
 - *Proceedings of the 16th Annual Conference on Theory and Applications of Models of Computation (TAMC 2020)*, *Lecture Notes in Computer Science*, **12337** (2020), 156–167.
 - arXiv:2003.02424, 2020.
7. Kenjiro Takazawa and Yu Yokoi:
A generalized-polymatroid approach to disjoint common independent sets in two matroids.
 - *Discrete Mathematics*, **342** (2019), 2002–2011.
8. Kenjiro Takazawa:
Generalizations of weighted matroid congestion games: Pure Nash equilibrium, sensitivity analysis, and discrete convex function.
 - *Journal of Combinatorial Optimization*, **38** (2019), 1043–1065.
 - *Proceedings of the 15th Annual Conference on Theory and Applications of Models of Computation (TAMC 2019)*, *Lecture Notes in Computer Science* **11436** (2019), 594–614.
9. Kenjiro Takazawa:
 M -convexity of the minimum-cost packings of arborescences.
 - arXiv:1805.08381, 2018.
10. Kenjiro Takazawa:
The b -bibranching problem: TDI system, packing, and discrete convexity.
 - arXiv:1802.03235, 2018.
11. Kenjiro Takazawa:
Decomposition theorems for square-free 2-matchings in bipartite graphs.
 - *Discrete Applied Mathematics*, **233** (2017), 215–223.
 - *Proceedings of the 41st International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2015)*, *Lecture Notes in Computer Science* **9224** (2016), 373–387.
12. Kenjiro Takazawa:
Finding a maximum 2-matching excluding prescribed cycles in bipartite graphs.
 - *Discrete Optimization*, **26** (2017), 26–40.
 - *Proceedings of the 41st International Symposium on Mathematical Foundations of Computer Science (MFCS 2016)*, *Leibniz International Proceedings in Informatics* **58** (2016), 87:1–87:14.
13. Yusuke Kobayashi and Kenjiro Takazawa:
Randomized strategies for cardinality robustness in the knapsack problem.
 - *Theoretical Computer Science*, **699** (2017), 53–62.
 - *Proceedings of the 13th Meeting on Analytic Algorithmics and Combinatorics (ANALCO 2016)*, 25–33.

14. Kenjiro Takazawa:
Excluded t -factors in bipartite graphs: Unified framework for nonbipartite matchings, restricted 2-matchings, and matroids.
 - *Proceedings of the 19th Conference on Integer Programming and Combinatorial Optimization (IPCO 2017), Lecture Notes in Computer Science* **10328**, 430–441.
 - arXiv:1708.00582, 2017.
15. Magnús M. Halldórsson, Toshimasa Ishii, Kazuhisa Makino, and Kenjiro Takazawa:
Posimodular function optimization.
 - *Proceedings of the 15th International Symposium on Algorithms and Data Structures (WADS 2017), Lecture Notes in Computer Science* **10389**, 437–448.
16. Kenjiro Takazawa:
A $7/6$ -approximation algorithm for the minimum 2-edge connected subgraph problem in bipartite cubic graphs.
 - *Information Processing Letters*, **116** (2016), 550–553.
17. Kenjiro Takazawa:
Optimal matching forests and valuated delta-matroids.
 - *SIAM Journal on Discrete Mathematics*, **28** (2014), 445–467.
 - *Proceedings of the 15th Conference on Integer Programming and Combinatorial Optimization (IPCO 2011), Lecture Notes in Computer Science* **6655** (2011), 404–416.
18. Satoru Fujishige, Tamás Király, Kazuhisa Makino, Kenjiro Takazawa, and Shin-ichi Tanigawa:
Minimizing submodular functions on diamonds via generalized fractional matroid matchings.
 - EGRES Technical Reports, TR-2014-14, Egerváry Research Group, 2014.
 - RIMS Preprint, RIMS-1812, Kyoto University, 2015.
19. Sylvia Boyd, Satoru Iwata, and Kenjiro Takazawa:
Finding 2-factors closer to TSP tours in cubic graphs.
 - *SIAM Journal on Discrete Mathematics*, **27** (2013), 918–939.
20. Kenjiro Takazawa:
Shortest bibranchings and valuated matroid intersection.
 - *Japan Journal of Industrial and Applied Mathematics*, **29** (2012), 561–573.
21. Yusuke Kobayashi, Jácint Szabó, and Kenjiro Takazawa:
A proof of Cunningham’s conjecture on restricted subgraphs and jump systems.
 - *Journal of Combinatorial Theory*, **B102** (2012), 948–966.
22. Kenjiro Takazawa:
A weighted independent even factor algorithm.
 - *Mathematical Programming*, **132** (2012), 261–276.
23. Kenjiro Takazawa:
Even factors: Algorithms and structure.
 - In: Satoru Iwata (ed.), *Combinatorial Optimization and Discrete Algorithms, RIMS Kôkyûroku Bessatsu*, **B23** (2010), 233–252.
24. Yusuke Kobayashi and Kenjiro Takazawa:
Even factors, jump systems, and discrete convexity.
 - *Journal of Combinatorial Theory*, **B99** (2009), 139–161.

25. Kenjiro Takazawa:
A weighted $K_{t,t}$ -free t -factor algorithm for bipartite graphs.
 - *Mathematics of Operations Research*, **34** (2009), 351–362.
 - *Proceedings of the 13th Conference on Integer Programming and Combinatorial Optimization (IPCO 2008)*, *Lecture Notes in Computer Science* **5035** (2008), 62–76.
26. Kenjiro Takazawa:
A weighted even factor algorithm.
 - *Mathematical Programming*, **115** (2008), 223–237.
27. Satoru Iwata and Kenjiro Takazawa:
The independent even factor problem.
 - *SIAM Journal on Discrete Mathematics*, **22** (2008), 1411–1427.
 - *Proceedings of the 18th ACM-SIAM Symposium on Discrete Algorithms (SODA 2007)*, 1171–1180.

Conference Talks

1. Kenjiro Takazawa:
Notes on equitable partitions into matching forests in mixed graphs and b -branchings in digraphs, The 6th International Symposium on Combinatorial Optimization, Online, 2020.
2. Naonori Kakimura, Naoyuki Kamiyama, and Kenjiro Takazawa:
The b -branching problem: Branchings with high indegree, The 10th Cargèse Workshop on Combinatorial Optimization, Corsica, France, 2019.
3. Kenjiro Takazawa:
 b -branchings: Branchings with high indegree, The 11th Hungarian-Japanese Symposium on Discrete Mathematics and Its Applications (HJ 2019), Tokyo, Japan, 2019.
 - Invited talk.
4. Kenjiro Takazawa:
Generalizations of weighted matroid congestion games: Pure Nash equilibrium, sensitivity analysis, and discrete convex function, The 15th Annual Conference on Theory and Applications of Models of Computation (TAMC 2019), Kitakyushu, Japan, 2019.
5. Kenjiro Takazawa:
Excluded t -factors in bipartite graphs: A unified framework for nonbipartite matchings and restricted 2-matchings, The Traveling Salesman Problem: Algorithms & Optimization, Banff, Canada, 2018.
6. Naonori Kakimura, Naoyuki Kamiyama, and Kenjiro Takazawa:
The b -branching problem in digraphs, The 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018), Liverpool, UK, 2018.
7. Kenjiro Takazawa:
The b -bibranching problem: TDI system, packing, and discrete convexity, The 23rd International Symposium on Mathematical Programming (ISMP 2018), Bordeaux, France, 2018.
8. Kenjiro Takazawa:
Excluded t -factors in bipartite graphs: A unified framework for nonbipartite matchings and

restricted 2-matchings, The 19th Conference on Integer Programming and Combinatorial Optimization (IPCO 2017), Waterloo, Canada, 2017.

9. Kenjiro Takazawa:
Excluded t -factors in bipartite graphs: A unified framework for nonbipartite matchings and restricted 2-matchings, The 10th Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications (JH 2017), Budapest, Hungary, 2017.
10. Kenjiro Takazawa:
Finding a maximum 2-matching excluding prescribed cycles in bipartite graphs, The 41st International Symposium on Mathematical Foundations of Computer Science (MFCS 2016), Kraków, Poland, 2016.
11. Kenjiro Takazawa:
Decomposition theorems for square-free 2-matchings in bipartite graphs, The 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh, USA, 2015.
12. Kenjiro Takazawa:
Decomposition theorems for square-free 2-matchings in bipartite graphs, The 41st International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2015), Munich, Germany, 2015.
13. Kenjiro Takazawa:
Structure theorems for square-free 2-matchings in bipartite graphs, The 9th Hungarian-Japanese Symposium on Discrete Mathematics and Its Applications (HJ 2015), Fukuoka, Japan, 2015.
14. Sylvia Boyd, Satoru Iwata, and Kenjiro Takazawa:
Finding 2-factors closer to TSP tours in cubic graphs, The 18th Aussois Combinatorial Optimization Workshop, Aussois, France, 2014.
15. Kenjiro Takazawa:
Shortest bibranchings and valuated matroid intersection, Combinatorial Geometries: Matroids, Oriented Matroids and Applications, Marseille, France, 2013.
16. Kenjiro Takazawa:
Discrete convexity in network optimization: Matching forests and bibranchings, Kyoto RIMS Workshop “Discrete Convexity and Optimization”, Kyoto, Japan, 2012.
 ▶ Invited talk.
17. Sylvia Boyd, Satoru Iwata, and Kenjiro Takazawa:
Finding 2-factors closer to TSP tours in cubic graphs, The 3rd Cargèse Workshop on Combinatorial Optimization, Corsica, France, 2012.
18. Sylvia Boyd, Satoru Iwata, and Kenjiro Takazawa:
Covering cuts in bridgeless cubic graphs, The 21st International Symposium on Mathematical Programming (ISMP 2012), Berlin, Germany, 2012.
19. Kenjiro Takazawa:
Shortest bibranchings and valuated matroid intersection, The First ETH-Japan Workshop on Science and Computing, Engelberg, Switzerland, 2012.

- ▷ The 18th Japan Conference on Discrete and Computational Geometry and Graphs (JCDCGG 2015)
- ▷ The 7th Hungarian-Japanese Symposium on Discrete Mathematics and Its Applications (HJ 2011)

Referee

I referee an average of 10–15 papers per year. I have refereed for the following journals and conferences:

- ▷ Algorithmica
 - ▷ Combinatorica
 - ▷ Computers & Operations Research
 - ▷ Discrete Applied Mathematics
 - ▷ Discrete Mathematics & Theoretical Computer Science
 - ▷ Discrete Optimization
 - ▷ Discussiones Mathematicae Graph Theory
 - ▷ Electronic Journal of Combinatorics
 - ▷ Graphs and Combinatorics
 - ▷ IEICE Transactions
 - ▷ Information Processing Letters
 - ▷ Japan Journal of Industrial and Applied Mathematics
 - ▷ Journal of Combinatorial Mathematics and Combinatorial Computing
 - ▷ Journal of the ACM
 - ▷ Journal of the Operations Research Society of Japan
 - ▷ JSIAM Letters
 - ▷ Kyungpook Mathematical Journal
 - ▷ Linear Algebra and Its Applications
 - ▷ Mathematical Programming
 - ▷ Mathematics of Operations Research
 - ▷ Operations Research Letters
 - ▷ Pacific Journal of Optimization
 - ▷ Publications of the Research Institute for Mathematical Sciences
 - ▷ The Review of Socionetwork Strategies
 - ▷ RIMS Kôkyûroku Bessatsu
 - ▷ SIAM Journal on Discrete Mathematics
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- ▷ Analytic Algorithmics and Combinatorics (ANALCO)
 - ▷ International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX)
 - ▷ International Colloquium on Automata, Languages and Programming (ICALP)
 - ▷ Conference on Integer Programming and Combinatorial Optimization (IPCO)
 - ▷ International Symposium on Algorithms and Computation (ISAAC)
 - ▷ International Symposium on Combinatorial Optimization (ISCO)
 - ▷ Latin American Theoretical Informatics Symposium (LATIN)
 - ▷ Annual Conference of the Society of Instrument and Control Engineers of Japan (SICE)
 - ▷ ACM-SIAM Symposium on Discrete Algorithms (SODA)
 - ▷ International Symposium on Theoretical Aspects of Computer Science (STACS)

▷ Algorithms and Data Structures Symposium (WADS)