

Kenjiro Takazawa

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Employment

- ▶ Professor at Department of Industrial and Systems Engineering, Faculty of Science and Engineering, Hosei University, since April 2023.
- ▶ Associate Professor at Department of Industrial and Systems Engineering, Faculty of Science and Engineering, Hosei University, April 2016–March 2023.
- ▶ 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. Yukiya Hatajima and Kenjiro Takazawa:
A note on upgrading the min-max weight of a base of a matroid.
 - ▶ *JSIAM Letters*, **16** (2024), 1–4.
2. Kenjiro Takazawa:
Pure Nash equilibria in weighted congestion games with complementarities and beyond.
 - ▶ *Proceedings of the 23rd International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2024)*, 2495–2497.
 - ▶ arXiv:2401.03861, 2024.
3. Yuni Iwamasa, Yusuke Kobayashi, and Kenjiro Takazawa:
Finding a maximum restricted t -matching via Boolean edge-CSP.
 - ▶ *Proceedings of the 32nd Annual European Symposium on Algorithms (ESA 2024)*, to appear.
 - ▶ arXiv:2310.20245, 2023.

4. Kenjiro Takazawa:
A unified model of congestion games with priorities: Two-sided markets with ties, finite and non-affine delay functions, and pure Nash equilibria.
‣ arXiv:2407.12300, 2024.
5. Gergely Csáji, Tamás Király, Kenjiro Takazawa, and Yu Yokoi:
Popular maximum-utility matchings with matroid constraints.
‣ arXiv:2407.09798, 2024.
6. Kenjiro Takazawa:
An efficient algorithm for minimizing M-convex functions under a color-induced budget constraint.
‣ *Operations Research Letters*, **51** (2023), 128–132.
7. Kei Natsui and Kenjiro Takazawa:
Finding popular branchings in vertex-weighted directed graphs.
‣ *Theoretical Computer Science*, **953** (2023), 113799.
‣ *Proceedings of the 16th International Conference and Workshops on Algorithms and Computation (WALCOM 2022)*, *Lecture Notes in Computer Science*, **13174** (2022), 303–314.
8. Yuga Kanaya and Kenjiro Takazawa:
A faster deterministic approximation algorithm for TTP-2.
‣ arXiv:2310.02592, 2023.
9. Magnús M. Halldórsson, Toshimasa Ishii, Kazuhisa Makino, and Kenjiro Takazawa:
Posimodular function optimization.
‣ *Algorithmica*, **84** (2022), 1107–1131.
‣ *Proceedings of the 15th International Symposium on Algorithms and Data Structures (WADS 2017)*, *Lecture Notes in Computer Science* **10389** (2017), 437–448.
10. Kenjiro Takazawa:
Notes on equitable partitions into matching forests in mixed graphs and into b -branchings in digraphs.
‣ *Discrete Mathematics and Theoretical Computer Science*, **24** (2022).
‣ *Proceedings of the 6th International Symposium on Combinatorial Optimization (ISCO 2020)*, *Lecture Notes in Computer Science*, **12176** (2020), 214–224.
11. Satoru Fujishige, Tamás Király, Kazuhisa Makino, Kenjiro Takazawa, and Shin-ichi Tanigawa:
Minimizing submodular functions on diamonds via generalized fractional matroid matchings.
‣ *Journal of Combinatorial Theory, Series B*, **157** (2022), 294–345.
12. Yuni Iwamasa and Kenjiro Takazawa:
Optimal matroid bases with intersection constraints: Valuated matroids, M-convex functions, and their applications.
‣ *Mathematical Programming*, **194** (2022), 229–256.
‣ *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.

13. Kenjiro Takazawa:
The b -bibranching problem: TDI system, packing, and discrete convexity.
‣ *Networks*, **79** (2022), 32–46.
14. Shiori Matsuura and Kenjiro Takazawa:
An improved heuristic algorithm for the maximum benefit Chinese postman problem.
‣ *RAIRO-Operations Research*, **56** (2022), 1283–1291.
15. Kenjiro Takazawa:
Excluded t -factors in bipartite graphs: Unified framework for nonbipartite matchings, restricted 2-matchings, and matroids.
‣ *SIAM Journal on Discrete Mathematics*, **36** (2022), 702–727.
‣ *Proceedings of the 19th Conference on Integer Programming and Combinatorial Optimization (IPCO 2017), Lecture Notes in Computer Science* **10328**, 430–441.
16. Fuga Kiyosue and Kenjiro Takazawa:
A common generalization of budget games and congestion games.
‣ *Proceedings of the 15th International Symposium on Algorithmic Game Theory (SAGT 2022), Lecture Notes in Computer Science*, **13584** (2022), 258–274.
17. Kazuo Murota and Kenjiro Takazawa:
Relationship of two formulations for shortest bibranchings.
‣ *Japan Journal of Industrial and Applied Mathematics*, **38** (2021), 141–161.
18. 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.
19. 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.
20. 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.
21. Kenjiro Takazawa and Yu Yokoi:
A generalized-polymatroid approach to disjoint common independent sets in two matroids.
‣ *Discrete Mathematics*, **342** (2019), 2002–2011.
22. 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.
23. 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.
- 24. 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.
- 25. 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.
- 26. 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.
- 27. 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.
- 28. 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.
- 29. Kenjiro Takazawa:
Shortest bibranchings and valuated matroid intersection.
 - *Japan Journal of Industrial and Applied Mathematics*, **29** (2012), 561–573.
- 30. Yusuke Kobayashi, Jácint Szabó, and Kenjiro Takazawa:
A proof of Cunningham’s conjecture on restricted subgraphs and jump systems.
 - *Journal of Combinatorial Theory, Series B*, **102** (2012), 948–966.
- 31. Kenjiro Takazawa:
A weighted independent even factor algorithm.
 - *Mathematical Programming*, **132** (2012), 261–276.
- 32. Kenjiro Takazawa:
Even factors: Algorithms and structure.
 - In: Satoru Iwata (ed.), *Combinatorial Optimization and Discrete Algorithms, RIMS Kôkyûroku Bessatsu*, **B23** (2010), 233–252.
- 33. Yusuke Kobayashi and Kenjiro Takazawa:
Even factors, jump systems, and discrete convexity.
 - *Journal of Combinatorial Theory, Series B*, **99** (2009), 139–161.

34. 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.
35. Kenjiro Takazawa:
A weighted even factor algorithm.
 - *Mathematical Programming*, **115** (2008), 223–237.
36. 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. K. Takazawa:
Pure Nash equilibria in weighted congestion games with complementarities and beyond, The 23rd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2024), Auckland, New Zealand, 2024.
2. Fuga Kiyosue and K. Takazawa:
A common generalization of budget games and congestion games, The 15th International Symposium on Algorithmic Game Theory (SAGT 2022), Colchester, UK, 2022.
3. Kenjiro Takazawa:
Notes on equitable partitions into matching forests in mixed graphs and b -branchings in digraphs, The 6th International Symposium on Combinatorial Optimization (ISCO 2020), Online, 2020.
4. 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.
5. 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.
6. 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.
7. 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.

8. 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.
9. Kenjiro Takazawa:
The b -bibranching problem: TDI system, packing, and discrete convexity, The 23rd International Symposium on Mathematical Programming (ISMP 2018), Bordeaux, France, 2018.
10. 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.
11. 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.
12. 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.
13. Kenjiro Takazawa:
Decomposition theorems for square-free 2-matchings in bipartite graphs, The 22nd International Symposium on Mathematical Programming (ISMP 2015), Pittsburgh, USA, 2015.
14. 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.
15. 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.
16. 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.
17. Kenjiro Takazawa:
Shortest bibranchings and valuated matroid intersection, Combinatorial Geometries: Matroids, Oriented Matroids and Applications, Marseille, France, 2013.
18. Kenjiro Takazawa:
Discrete convexity in network optimization: Matching forests and bibranchings, Kyoto RIMS Workshop “Discrete Convexity and Optimization”, Kyoto, Japan, 2012.
 > Invited talk.
19. 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.

20. 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.
21. Kenjiro Takazawa:
Shortest bibranchings and valuated matroid intersection, The First ETH-Japan Workshop on Science and Computing, Engelberg, Switzerland, 2012.
22. Kenjiro Takazawa:
Optimal matching forests and valuated delta-matroids, The 15th Conference on Integer Programming and Combinatorial Optimization (IPCO 2011), New York, USA, 2011.
23. Kenjiro Takazawa:
Optimal matching forests and valuated delta-matroids, Shonan Meeting: Graph Algorithm and Combinatorial Optimization, Shonan, Japan, 2011.
24. Kenjiro Takazawa:
A weighted independent even factor algorithm, The 6th Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications (JH 2009), Budapest, Hungary, 2009.
25. Kenjiro Takazawa:
Even factors: Algorithms and structure, Kyoto RIMS Workshop on Combinatorial Optimization and Discrete Algorithms, Kyoto, Japan, 2008.
 ▸ Invited talk.
26. Kenjiro Takazawa:
A weighted $K_{t,t}$ -free t -factor algorithm for bipartite graphs, The 13th Conference on Integer Programming and Combinatorial Optimization (IPCO 2008), Bertinoro, Italy, 2008.
27. Kenjiro Takazawa:
A weighted $K_{t,t}$ -free t -factor algorithm for bipartite graphs, The 1st AAAC Annual Meeting, Pokfulam, Hong Kong, 2008.
28. Kenjiro Takazawa:
A weighted even factor algorithm, The 5th Hungarian-Japanese Symposium on Discrete Mathematics and Its Applications (HJ 2007), Sendai, Japan, 2007.
29. Satoru Iwata and Kenjiro Takazawa:
The independent even factor problem, The 18th ACM-SIAM Symposium on Discrete Algorithms (SODA 2007), New Orleans, USA, 2007.
30. Satoru Iwata and Kenjiro Takazawa:
The independent even factor problem, The 19th International Symposium on Mathematical Programming (ISMP 2006), Rio de Janeiro, Brazil, 2006.
31. Kenjiro Takazawa:
A weighted even factor algorithm, The 37th Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida, USA, 2006.

Service to the Community

Program Committee

- The 4th International Symposium on Combinatorial Optimization (ISCO 2016)

Organizing Committee

- ▷ The Japanese Conference on Combinatorics and its Applications 2018 (JCCA 2018)
- ▷ Computational Complexity Conference 2016 (CCC 2016) Satellite Kyoto Workshop
- ▷ The Japanese Conference on Combinatorics and its Applications 2016 (JCCA 2016)
- ▷ 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)

Editorial Work

- ▷ Transactions of the Japan Society for Industrial and Applied Mathematics, Associate Editor, since 2021

Referee

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

- ▷ 4OR: A Quarterly Journal of Operations Research
- ▷ Algorithmica
- ▷ Combinatorica
- ▷ Computers & Operations Research
- ▷ Discrete Applied Mathematics
- ▷ Discrete 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 Graph Algorithms and Applications
- ▷ 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
- ▷ RAIRO-Operations Research
- ▷ RIMS Kôkyûroku Bessatsu
- ▷ SIAM Journal on Discrete Mathematics

- ▷ ANALCO: Analytic Algorithmics and Combinatorics
- ▷ APPROX: International Workshop on Approximation Algorithms for Combinatorial Optimization Problems
- ▷ ESA: European Symposium on Algorithms
- ▷ ICALP: International Colloquium on Automata, Languages and Programming
- ▷ IEOM: Conference on Industrial Engineering and Operations Management
- ▷ IPCO: Conference on Integer Programming and Combinatorial Optimization
- ▷ ISAAC: International Symposium on Algorithms and Computation
- ▷ ISCO: International Symposium on Combinatorial Optimization
- ▷ LATIN: Latin American Theoretical Informatics Symposium
- ▷ MFCS: International Symposium on Mathematical Foundations of Computer Science
- ▷ SICE: Annual Conference of the Society of Instrument and Control Engineers of Japan
- ▷ SODA: ACM-SIAM Symposium on Discrete Algorithms
- ▷ STACS: International Symposium on Theoretical Aspects of Computer Science
- ▷ STOC: Annual ACM Symposium on Theory of Computing
- ▷ SWAT: Scandinavian Symposium on Algorithm Theory
- ▷ WADS: Algorithms and Data Structures Symposium
- ▷ WG: International Workshop on Graph-Theoretic Concepts in Computer Science