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Personal

Born on August 2, 1982.

Japanese Citizen.

Research Interests

Graph algorithm, discrete structure, combinatorial optimization, and graph theory.

Education

Bachelor of Engineering from Faculty of Engineering, University of Tokyo, March 2005.

Master of Information Science and Technology from Graduate School of Information Science and Technology, University of Tokyo, March 2007.

Ph.D in Information Science and Technology from Graduate School of Information Science and Technology, University of Tokyo, March 2010.

Dissertation Title: *Algorithms for Finding Disjoint Paths: Acceleration and Extension*

Adviser: Professor Kazuo Murota

Academic Appointments

Research Fellow of the Japan Society for the Promotion of Science (DC1), April 2007–March 2010.

Assistant Professor at University of Tokyo, April 2010–March 2015.

Associate Professor at University of Tsukuba, April 2015–March 2018.

Associate Professor at Kyoto University, April 2018–present.

Publications

Journal Articles

1. Y. Kobayashi, K. Murota, and K. Tanaka: Operations on M-convex functions on jump systems, *SIAM Journal on Discrete Mathematics*, 21 (2007), pp. 107–129.
2. Y. Kobayashi and K. Murota: Induction of M-convex functions by linking systems, *Discrete Applied Mathematics*, 155 (2007), pp. 1471–1480.

3. Y. Kobayashi and K. Takazawa: Even factors, jump systems, and discrete convexity, *Journal of Combinatorial Theory, Series B*, 99 (2009), pp. 139–161.
4. Y. Kobayashi: Induced disjoint paths problem in a planar digraph, *Discrete Applied Mathematics*, 157 (2009), pp. 3231–3238.
5. S. Iwata and Y. Kobayashi: An algorithm for minimum cost arc-connectivity orientations, *Algorithmica*, 56 (2010), pp. 437–447.
6. Y. Kobayashi: A simple algorithm for finding a maximum triangle-free 2-matching in subcubic graphs, *Discrete Optimization*, 7 (2010), pp. 197–202.
7. Y. Kobayashi and C. Sommer: On shortest disjoint paths in planar graphs, *Discrete Optimization*, 7 (2010), pp. 234–245.
8. K. Kawarabayashi and Y. Kobayashi: Algorithms for finding an induced cycle in planar graphs, *Combinatorica*, 30 (2010), pp. 715–734.
9. K. Kawarabayashi and Y. Kobayashi: An improved algorithm for the half-disjoint paths problem, *SIAM Journal on Discrete Mathematics*, 25 (2011), pp. 1322–1330.
10. S. Imahori, Y. Miyamoto, H. Hashimoto, Y. Kobayashi, M. Sasaki, and M. Yagiura: The complexity of the node capacitated in-tree packing problem, *Networks*, 59 (2012), pp. 13–21.
11. K. Kawarabayashi, Y. Kobayashi, and B. Reed: The disjoint paths problem in quadratic time, *Journal of Combinatorial Theory, Series B*, 102 (2012), pp. 424–435.
12. K. Bérczi and Y. Kobayashi: An algorithm for $(n - 3)$ -connectivity augmentation problem: jump system approach, *Journal of Combinatorial Theory, Series B*, 102 (2012), pp. 565–587.
13. K. Kawarabayashi and Y. Kobayashi: A linear time algorithm for the induced disjoint paths problem in planar graphs, *Journal of Computer and System Sciences*, 78 (2012), pp. 670–680.
14. K. Kawarabayashi and Y. Kobayashi: An immersion of a square in 4-edge-connected graphs, *Progress in Informatics*, 9 (2012), pp. 35–36.
15. Y. Yoshida and Y. Kobayashi: Testing the (s, t) -disconnectivity of graphs and digraphs, *Theoretical Computer Science*, 434 (2012), pp. 98–113.
16. Y. Kobayashi and X. Yin: An algorithm for finding a maximum t -matching excluding complete partite subgraphs, *Discrete Optimization*, 9 (2012), pp. 98–108.
17. Y. Kobayashi and Y. Yoshida: Algorithms for finding a maximum non- k -linked graph, *SIAM Journal on Discrete Mathematics*, 26 (2012), pp. 591–604.
18. Y. Kobayashi, J. Szabó, and K. Takazawa: A proof of Cunningham’s conjecture on restricted subgraphs and jump systems, *Journal of Combinatorial Theory, Series B*, 102 (2012), pp. 948–966.
19. K. Kawarabayashi and Y. Kobayashi: Fixed-parameter tractability for the subset feedback set problem and the S -cycle packing problem, *Journal of Combinatorial Theory, Series B*, 102 (2012), pp. 1020–1034.
20. Y. Kobayashi, K. Murota, and R. Weismantel: Cone superadditivity of discrete convex functions, *Mathematical Programming, Series A*, 135 (2012), pp. 25–44.
21. K. Kawarabayashi and Y. Kobayashi: An $O(\log n)$ -approximation algorithm for the edge-disjoint paths problem in Eulerian planar graphs, *ACM Transactions on Algorithms*, 9 (2013), Article 16.

22. R. Fujita, Y. Kobayashi, and K. Makino: Robust matchings and matroid intersections, *SIAM Journal on Discrete Mathematics*, 27 (2013), pp. 1234–1256.
23. Y. Kobayashi: Triangle-free 2-matchings and M-concave functions on jump systems, *Discrete Applied Mathematics*, 175 (2014), pp. 35–42.
24. A. Kawamura and Y. Kobayashi: Fence patrolling by mobile agents with distinct speeds, *Distributed Computing*, 28 (2015), pp. 147–154.
25. H. Flier, Y. Kobayashi, M. Mihalák, A. Schöbel, P. Widmayer, and A. Zych, Selecting vertex disjoint paths in plane graphs, *Networks*, 66 (2015), pp. 136–144.
26. K. Kawarabayashi and Y. Kobayashi: The edge disjoint paths problem in Eulerian graphs and 4-edge-connected graphs, *Combinatorica*, 35 (2015), pp. 477–495.
27. Y. Kobayashi: The complexity of minimizing the difference of two M^t -convex set functions, *Operations Research Letters*, 43 (2015), pp. 573–574.
28. K. Ishihara and Y. Kobayashi: Routing algorithms under mutual interference constraints, *Journal of the Operations Research Society of Japan*, 58 (2015), pp. 209–222.
29. A. Bernáth, Y. Kobayashi, and T. Matsuoka: The generalized terminal backup problem, *SIAM Journal on Discrete Mathematics*, 29 (2015), pp. 1764–1782.
30. K. Otsuki, Y. Kobayashi, and K. Murota: Improved max-flow min-cut algorithms in a circular disk failure model with application to a road network, *European Journal of Operational Research*, 248 (2016), pp. 396–403.
31. K. Kawarabayashi and Y. Kobayashi: Edge-disjoint odd cycles in 4-edge-connected graphs, *Journal of Combinatorial Theory, Series B*, 119 (2016), pp. 12–27.
32. K. Bérczi, T. Király, and Y. Kobayashi: Covering intersecting bi-set families under matroid constraints, *SIAM Journal on Discrete Mathematics*, 30 (2016), pp. 1758–1774.
33. K. Kawarabayashi and Y. Kobayashi: An improved approximation algorithm for the edge-disjoint paths problem with congestion two, *ACM Transactions on Algorithms*, 13 (2016), Article 5.
34. Y. Kobayashi and S. Toyooka: Finding a shortest non-zero path in group-labeled graphs via permanent computation, *Algorithmica*, 77 (2017), pp. 1128–1142.
35. N. Kakimura, K. Kawarabayashi, and Y. Kobayashi: Packing edge-disjoint odd Eulerian subgraphs through prescribed vertices in 4-edge-connected graphs, *SIAM Journal on Discrete Mathematics*, 31 (2017), pp. 766–782.
36. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Efficient stabilization of cooperative matching games, *Theoretical Computer Science*, 677 (2017), pp. 69–82.
37. K. Bérczi and Y. Kobayashi: An algorithm for identifying cycle-plus-triangles graphs, *Discrete Applied Mathematics*, 226 (2017), pp. 10–16.
38. Y. Kobayashi and K. Takazawa: Randomized strategies for cardinality robustness in the knapsack problem, *Theoretical Computer Science*, 699 (2017), pp. 53–62.
39. H. Nishiyama, Y. Kobayashi, Y. Yamauchi, S. Kijima, and M. Yamashita: The parity Hamiltonian cycle problem, *Discrete Mathematics*, 341 (2018), pp. 606–626.

40. T. N. Hau, N. Kakimura, K. Kawarabayashi, Y. Kobayashi, T. Matsuoka, and Y. Yokoi: Optimal cache placement for an academic backbone network, *Journal of the Operations Research Society of Japan*, 61 (2018), pp. 197–216.
41. K. Kawarabayashi and Y. Kobayashi: All-or-nothing multicommodity flow problem with bounded fractionality in planar graphs, *SIAM Journal on Computing*, 47 (2018), pp. 1483–1504.
42. Y. Kobayashi: NP-hardness and fixed-parameter tractability of the minimum spanner problem, *Theoretical Computer Science*, 746 (2018), pp. 88–97.
43. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Minimum-cost b -edge dominating sets on trees, *Algorithmica*, 81 (2019), pp. 343–366.
44. Y. Kobayashi and R. Sako: Two disjoint shortest paths problem with non-negative edge length, *Operations Research Letters*, 47 (2019), pp. 66–69.
45. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Reconfiguration of maximum-weight b -matchings in a graph, *Journal of Combinatorial Optimization*, 37 (2019), pp. 454–464.
46. K. Takayama and Y. Kobayashi: A strongly polynomial time algorithm for the maximum supply rate problem on trees, *Theoretical Computer Science*, 806 (2020), pp. 323–331.
47. K. Kawarabayashi and Y. Kobayashi: Linear min-max relation between the treewidth of an H -minor-free graph and its largest grid minor, *Journal of Combinatorial Theory, Series B*, 141 (2020), pp. 165–180.
48. Y. Kawase, Y. Kobayashi, and Y. Yamaguchi: Finding a path with two labels forbidden in group-labeled graphs, *Journal of Combinatorial Theory, Series B*, 143 (2020), pp. 65–122.
49. H.L. Bodlaender, T. Hanaka, Y. Kobayashi, Y. Kobayashi, Y. Okamoto, Y. Otachi, and T.C. van der Zanden: Subgraph isomorphism on graph classes that exclude a substructure, *Algorithmica*, 82 (2020), pp. 3566–3587.
50. K. Takayama and Y. Kobayashi: On the number of edges in a graph with many two-hop disjoint paths, *Discrete Applied Mathematics*, 283 (2020), pp. 718–723.
51. M. Bonamy, M. Heinrich, T. Ito, Y. Kobayashi, H. Mizuta, M. Mühlenthaler, A. Suzuki, and K. Wasa: Diameter of colorings under Kempe changes, *Theoretical Computer Science*, 838 (2020), pp. 45–57.
52. T. Ito, N. Kakimura, and Y. Kobayashi: Complexity of the multi-service center problem, *Theoretical Computer Science*, 842 (2020), pp. 18–27.
53. G.L. Duarte, H. Eto, T. Hanaka, Y. Kobayashi, Y. Kobayashi, D. Lokshtanov, L.L.C. Pedrosa, R.C.S. Schouery, U.S. Souza: Computing the largest bond and the maximum connected cut of a graph, *Algorithmica*, 83 (2021), pp. 1421–1458.
54. T. Hanaka, Y. Kobayashi, Y. Kobayashi, and T. Yagita: Finding a maximum minimal separator: graph classes and fixed-parameter tractability, *Theoretical Computer Science*, 865 (2021), pp. 131–140.
55. T. Ito, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Algorithms for gerrymandering over graphs, *Theoretical Computer Science*, 868 (2021), pp. 30–45.
56. Y. Iwata and Y. Kobayashi: Improved analysis of highest-degree branching for feedback vertex set, *Algorithmica*, 83 (2021), pp. 2503–2520.
57. Y. Filmus, Y. Kawase, Y. Kobayashi, and Y. Yamaguchi: Tight approximation for unconstrained XOS maximization, *Mathematics of Operations Research*, 46 (2021), pp. 1599–1610.

58. K. Bérczi, N. Kakimura, and Y. Kobayashi: Market pricing for matroid rank valuations, *SIAM Journal on Discrete Mathematics*, 35 (2021), pp. 2662–2678.
59. R. Belmonte, T. Hanaka, M. Kanzaki, M. Kiyomi, Y. Kobayashi, Y. Kobayashi, M. Lampis, H. Ono, and Y. Otachi: Parameterized complexity of (A, ℓ) -path packing, *Algorithmica*, 84 (2022), pp. 871–895.
60. Y. Kobayashi, Y. Okamoto, Y. Otachi, and Y. Uno: Linear-time recognition of double-threshold graphs, *Algorithmica*, 84 (2022), pp. 1163–1181.
61. Y. Kobayashi: Weighted triangle-free 2-matching problem with edge-disjoint forbidden triangles, *Mathematical Programming, Series B*, 192 (2022), pp. 675–702.
62. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Shortest reconfiguration of perfect matchings via alternating cycles, *SIAM Journal on Discrete Mathematics*, 36 (2022), pp. 1102–1123.
63. S. Iwata and Y. Kobayashi: A weighted linear matroid parity algorithm, *SIAM Journal on Computing*, 51 (2022), pp. STOC17-238–STOC17-280.
64. Y. Aoike, T. Gima, T. Hanaka, M. Kiyomi, Y. Kobayashi, Y. Kobayashi, K. Kurita, and Y. Otachi: An improved deterministic parameterized algorithm for cactus vertex deletion, *Theory of Computing Systems*, 66 (2022), pp. 502–515.
65. N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Submodular reassignment problem for reallocating agents to tasks with synergy effects, *Discrete Optimization*, 44 (2022), 100631.
66. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, Y. Okamoto: A parameterized view to the robust recoverable base problem of matroids under structural uncertainty, *Operations Research Letters*, 50 (2022), pp. 370–375.
67. T. Ishii, A. Kawamura, Y. Kobayashi, and K. Makino: Trade-offs among degree, diameter, and number of paths, *Discrete Applied Mathematics*, 327 (2023), pp. 96–100.
68. Y. Kobayashi and R. Mahara: Approximation algorithm for Steiner tree problem with neighbor-induced cost, *Journal of the Operations Research Society of Japan*, 66 (2023), pp. 18–36.
69. T. Ito, Y. Iwamasa, N. Kakimura, N. Kamiyama, Y. Kobayashi, S. Maezawa, Y. Nozaki, Y. Okamoto, and K. Ozeki: Monotone edge flips to an orientation of maximum edge-connectivity à la Nash-Williams, *ACM Transactions on Algorithms*, 19 (2023), Article 6.
70. N. Bousquet, T. Ito, Y. Kobayashi, H. Mizuta, P. Ouvrard, A. Suzuki, and K. Wasa: Reconfiguration of spanning trees with degree constraints or diameter constraints, *Algorithmica*, 85 (2023), pp. 2779–2816.
71. T. Hatanaka, F. Hommelsheim, T. Ito, Y. Kobayashi, M. Mühlenthaler, and A. Suzuki: Fixed-parameter algorithms for graph constraint logic, *Theoretical Computer Science*, 959 (2023), 113863.
72. N. Bousquet, F. Hommelsheim, Y. Kobayashi, M. Mühlenthaler, and A. Suzuki: Feedback vertex set reconfiguration in planar graphs, *Theoretical Computer Science*, 979 (2023), 114188.
73. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, Y. Nozaki, Y. Okamoto, and K. Ozeki: On reachable assignments under dichotomous preferences, *Theoretical Computer Science*, 979 (2023), 114196.
74. K. Bérczi, E.R. Kovács, E. Boros, F.T. Gedef, N. Kamiyama, T. Kavitha, Y. Kobayashi, and K. Makino: Envy-free relaxations for goods, chores, and mixed items, *Theoretical Computer Science*, 1002 (2024), 114596.
75. Y. Kobayashi, R. Mahara, and Souta Sakamoto: EFX allocations for indivisible chores: matching-based approach, *Theoretical Computer Science*, 1026 (2025), 115010.

76. Y. Kobayashi: Optimal general factor problem and jump system intersection, *Mathematical Programming, Series B*, 210 (2025), pp. 591–610.
77. T. Ito, Y. Iwamasa, N. Kakimura, N. Kamiyama, Y. Kobayashi, Y. Nozaki, Y. Okamoto, and K. Ozeki: Reforming an envy-free matching, *Algorithmica*, 87 (2025), pp. 594–620.
78. Y. Kobayashi and R. Mahara: Proportional allocation of indivisible goods up to the least valued good on average, *SIAM Journal on Discrete Mathematics*, 39 (2025), pp. 533–549.
79. T. Ito, Y. Iwamasa, N. Kakimura, Y. Kobayashi, S. Maezawa, Y. Nozaki, Y. Okamoto, and K. Ozeki: Rerouting planar curves and disjoint paths, *ACM Transactions on Algorithms*, 21 (2025), Article 20.
80. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Algorithmic theory of qubit routing in the linear nearest neighbor architectures, *ACM Transactions on Quantum Computing*, to appear.
81. A. Inoue and Y. Kobayashi: An additive approximation scheme for the Nash social welfare maximization with identical additive valuations, *Journal of the Operations Research Society of Japan*, to appear.
82. T. Ito, Y. Iwamasa, Y. Kobayashi, S. Maezawa, Y. Nozaki, Y. Okamoto, and K. Ozeki: Reconfiguration of colorings in triangulations of the sphere, *Journal of Computational Geometry*, to appear.
83. Y. Kobayashi, R. Mahara, and T. Schwarcz: Reconfiguration of the union of arborescences, *Algorithmica*, to appear.

Refereed Conference Proceedings

1. K. Kawarabayashi and Y. Kobayashi: The induced disjoint paths problem, *Proceedings of the 13th Conference on Integer Programming and Combinatorial Optimization (IPCO 2008)*, LNCS 5035, 2008, pp. 47–61.
2. Y. Kobayashi and K. Kawarabayashi: Algorithms for finding an induced cycle in planar graphs and bounded genus graphs, *Proceedings of the 20th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2009)*, 2009, pp. 1146–1155.
3. S. Imahori, Y. Miyamoto, H. Hashimoto, Y. Kobayashi, M. Sasaki, and M. Yagiura: The complexity of the node capacitated in-tree packing problem, *Proceedings of the International Network Optimization Conference 2009*, 2009.
4. Y. Kobayashi and C. Sommer: On shortest disjoint paths in planar graphs, *Proceedings of the 20th International Symposium on Algorithms and Computation (ISAAC 2009)*, LNCS 5878, 2009, pp. 293–302.
5. K. Kawarabayashi and Y. Kobayashi: The edge disjoint paths problem in Eulerian graphs and 4-edge-connected graphs, *Proceedings of the 21st Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2010)*, 2010, pp. 345–353.
6. K. Kawarabayashi and Y. Kobayashi: An $O(\log n)$ -approximation algorithm for the disjoint paths problem in Eulerian planar graphs and 4-edge-connected planar graphs, *Proceedings of the 13th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2010)*, LNCS 6302, 2010, pp. 274–286.
7. K. Kawarabayashi and Y. Kobayashi: Improved algorithm for the half-disjoint paths problem, *Proceedings of the 13th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2010)*, LNCS 6302, 2010, pp. 287–297.

8. R. Fujita, Y. Kobayashi, and K. Makino: Robust matchings and matroid intersections, *Proceedings of the 18th Annual European Symposium on Algorithms (ESA 2010)*, LNCS 6347, 2010, pp. 123–134.
9. K. Kawarabayashi and Y. Kobayashi: Breaking $O(n^{1/2})$ -approximation algorithms for the edge-disjoint paths problem with congestion two, *Proceedings of the 43rd ACM Symposium on Theory of Computing (STOC 2011)*, 2011, pp. 81–88.
10. Y. Kobayashi and Y. Yoshida: Algorithms for finding a maximum non- k -linked graph, *Proceedings of the 19th European Symposium on Algorithms (ESA 2011)*, LNCS 6942, 2011, pp. 131–142.
11. N. Kakimura, K. Kawarabayashi, and Y. Kobayashi: Erdős-Pósa property and its algorithmic applications — parity constraints, subset feedback set, and subset packing, *Proceedings of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2012)*, 2012, pp. 1726–1736.
12. K. Kawarabayashi and Y. Kobayashi: List-coloring graphs without subdivisions and without immersions, *Proceedings of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2012)*, 2012, pp. 1425–1435.
13. K. Kawarabayashi and Y. Kobayashi: Edge-disjoint odd cycles in 4-edge-connected graphs, *Proceedings of the 29th Symposium on Theoretical Aspects of Computer Science (STACS 2012)*, 2012, pp. 206–217.
14. K. Kawarabayashi and Y. Kobayashi: Linear min-max relation between the treewidth of H -minor-free graphs and its largest grid minor, *Proceedings of the 29th Symposium on Theoretical Aspects of Computer Science (STACS 2012)*, 2012, pp. 278–289.
15. A. Kawamura and Y. Kobayashi: Fence patrolling by mobile agents with distinct speeds, *Proceedings of the 23rd International Symposium on Algorithms and Computation (ISAAC 2012)*, LNCS 7676, 2012, pp. 598–608.
16. K. Kawarabayashi and Y. Kobayashi: All-or-nothing multicommodity flow problem with bounded fractionality in planar graphs, *Proceedings of the 54th Annual IEEE Symposium on Foundations of Computer Science (FOCS 2013)*, 2013, pp. 187–196.
17. A. Bernáth and Y. Kobayashi: The generalized terminal backup problem, *Proceedings of the 25th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2014)*, 2014, pp. 1678–1686.
18. Y. Kobayashi and K. Otsuki: Max-flow min-cut theorem and faster algorithms in a circular disk failure model, *Proceedings of the 33rd Annual IEEE International Conference on Computer Communications (INFOCOM 2014)*, 2014, pp. 1635–1643.
19. K. Kawarabayashi, Y. Kobayashi, and S. Kreutzer: An excluded half-integral grid theorem for digraphs and the directed disjoint paths problem, *Proceedings of the 46th ACM Symposium on Theory of Computing (STOC 2014)*, 2014, pp. 70–78.
20. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Minimum-cost b -edge dominating sets on trees, *Proceedings of the 25th International Symposium on Algorithms and Computation (ISAAC 2014)*, LNCS 8889, 2014, pp. 195–207.
21. Y. Kawase, Y. Kobayashi, and Y. Yamaguchi: Finding a path in group-labeled graphs with two labels forbidden, *Proceedings of the 42nd International Colloquium on Automata, Languages, and Programming (ICALP 2015)*, 2015, pp. 797–809.
22. Y. Kobayashi and K. Takazawa: Randomized strategies for cardinality robustness in the knapsack problem, *Proceedings of the 13th Meeting on Analytic Algorithmics and Combinatorics (ANALCO 2016)*, 2016, pp. 25–33.

23. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Efficient stabilization of cooperative matching games, *Proceedings of the 15th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2016)*, 2016, pp. 41–49.
24. S. Iwata and Y. Kobayashi: A weighted linear matroid parity algorithm, *Proceedings of the 49th ACM Symposium on Theory of Computing (STOC 2017)*, 2017, pp. 264–276.
25. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Reconfiguration of maximum-weight b -matchings in a graph, *Proceedings of the 23rd Annual International Computing and Combinatorics Conference (COCOON 2017)*, 2017, pp. 287–296.
26. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, Y. Okamoto, and T. Shiitada: Tight approximability of the server allocation problem for real-time applications, *Proceedings of the 3rd International Workshop on Algorithmic Aspects of Cloud Computing (Algocloud 2017)*, 2017, pp. 41–55.
27. K. Bérczi and Y. Kobayashi: The directed disjoint shortest paths problem, *Proceedings of the 25th European Symposium on Algorithms (ESA 2017)*, 2017, 13:1–13:13.
28. T. Ito, N. Kakimura, and Y. Kobayashi: Complexity of the multi-service center problem, *Proceedings of the 28th International Symposium on Algorithms and Computation (ISAAC 2017)*, 2017, 48:1–48:12.
29. K. Takayama and Y. Kobayashi: A strongly polynomial time algorithm for the maximum supply rate problem on trees, *Proceedings of the 12th International Frontiers of Algorithmics Workshop (FAW 2018)*, 2018, pp. 54–57.
30. T. Ito, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Algorithms for gerrymandering over graphs, *Proceedings of the 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2019)*, 2019, pp. 1413–1421.
31. Y. Kobayashi, Y. Kobayashi, S. Miyazaki, and S. Tamaki: An improved fixed-parameter algorithm for max-cut parameterized by crossing number, *Proceedings of the 30th International Workshop on Combinatorial Algorithms (IWOCA 2019)*, 2019, pp. 327–338.
32. M. Bonamy, M. Heinrich, T. Ito, Y. Kobayashi, H. Mizuta, M. Mühlenthaler, A. Suzuki, and K. Wasa: Diameter of colorings under Kempe changes, *Proceedings of the 25th Annual International Computing and Combinatorics Conference (COCOON 2019)*, 2019, pp. 52–64.
33. M. Bonamy, N. Bousquet, M. Heinrich, T. Ito, Y. Kobayashi, A. Mary, M. Mühlenthaler, and K. Wasa: The perfect matching reconfiguration problem, *Proceedings of the 44th International Symposium on Mathematical Foundations of Computer Science (MFCS 2019)*, 2019, 80:1–80:14.
34. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Shortest reconfiguration of perfect matchings via alternating cycles, *Proceedings of the 27th European Symposium on Algorithms (ESA 2019)*, 2019, 61:1–61:15.
35. H. Eto, T. Hanaka, Y. Kobayashi, and Y. Kobayashi: Parameterized algorithms for maximum cut with connectivity constraints, *Proceedings of the 14th International Symposium on Parameterized and Exact Computation (IPEC 2019)*, 2019, 13:1–13:15.
36. Y. Iwata and Y. Kobayashi: Improved analysis of highest-degree branching for feedback vertex set, *Proceedings of the 14th International Symposium on Parameterized and Exact Computation (IPEC 2019)*, 2019, 22:1–22:11.
37. M. Bonamy, M. Heinrich, T. Ito, Y. Kobayashi, H. Mizuta, M. Mühlenthaler, A. Suzuki, and K. Wasa: Shortest reconfiguration of colorings under Kempe-changes, *Proceedings of the 37th Symposium on Theoretical Aspects of Computer Science (STACS 2020)*, 2020, 35:1–35:14.

38. Y. Kobayashi: An FPT algorithm for minimum additive spanner problem, *Proceedings of the 37th Symposium on Theoretical Aspects of Computer Science (STACS 2020)*, 2020, 11:1–11:16.
39. Y. Kobayashi: Weighted triangle-free 2-matching problem with edge-disjoint forbidden triangles, *Proceedings of the 21st Conference on Integer Programming and Combinatorial Optimization (IPCO 2020)*, 2020, pp. 280–293.
40. T. Jordán, Y. Kobayashi, R. Mahara, and K. Makino: The Steiner problem for count matroids, *Proceedings of the 31st International Workshop on Combinatorial Algorithms (IWOCA 2020)*, 2020, pp. 330–342.
41. R. Belmonte, T. Hanaka, M. Kanzaki, M. Kiyomi, Y. Kobayashi, Y. Kobayashi, M. Lampis, H. Ono, and Y. Otachi: Parameterized complexity of (A, ℓ) -path packing, *Proceedings of the 31st International Workshop on Combinatorial Algorithms (IWOCA 2020)*, 2020, pp. 43–55.
42. Y. Kobayashi, Y. Okamoto, Y. Otachi, and Y. Uno: Linear-time recognition of double-threshold graphs, *Proceedings of the 46th International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2020)*, 2020, pp. 286–297.
43. N. Bousquet, T. Ito, Y. Kobayashi, H. Mizuta, P. Ouvrard, A. Suzuki, and K. Wasa: Reconfiguration of spanning trees with many or few leaves, *Proceedings of the 28th European Symposium on Algorithms (ESA 2020)*, 2020, 24:1–24:15.
44. K. Bérczi, N. Kakimura, and Y. Kobayashi: Market pricing for matroid rank valuations, *Proceedings of the 31st International Symposium on Algorithms and Computation (ISAAC 2020)*, 2020, 39:1–39:15.
45. T. Hatanaka, F. Hommelsheim, T. Ito, Y. Kobayashi, M. Mühlenthaler, and A. Suzuki: Fixed-parameter algorithms for graph constraint logic, *Proceedings of the 15th International Symposium on Parameterized and Exact Computation (IPEC 2020)*, 2020, 15:1–15:15.
46. T. Ito, Y. Iwamasa, N. Kakimura, N. Kamiyama, Y. Kobayashi, S. Maezawa, Y. Nozaki, Y. Okamoto, and K. Ozeki: Monotone edge flips to an orientation of maximum edge-connectivity à la Nash-Williams, *Proceedings of the 2022 ACM-SIAM Symposium on Discrete Algorithms (SODA 2022)*, 2022, pp. 1342–1355.
47. N. Bousquet, T. Ito, Y. Kobayashi, H. Mizuta, P. Ouvrard, A. Suzuki, and K. Wasa: Reconfiguration of spanning trees with degree constraint or diameter constraint, *Proceedings of the 39th International Symposium on Theoretical Aspects of Computer Science (STACS 2022)*, 2022, 15:1–15:21.
48. T. Ito, Y. Iwamasa, N. Kakimura, N. Kamiyama, Y. Kobayashi, Y. Nozaki, Y. Okamoto, and K. Ozeki: Reforming an envy-free matching, *Proceedings of the 36th AAAI Conference on Artificial Intelligence (AAAI 2022)*, 2022, pp. 5084–5091.
49. A. Inoue and Y. Kobayashi: An additive approximation scheme for the Nash social welfare maximization with identical additive valuations, *Proceedings of the 33rd International Workshop on Combinatorial Algorithms (IWOCA 2022)*, 2022, pp. 341–354.
50. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, Y. Nozaki, Y. Okamoto, and K. Ozeki: On reachable assignments under dichotomous preferences, *Proceedings of the 24th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2022)*, 2022, pp. 650–658.
51. Y. Kobayashi and T. Terao: One-face shortest disjoint paths with a deviation terminal, *Proceedings of the 33rd International Symposium on Algorithms and Computation (ISAAC 2022)*, 2022, 47:1–47:15.
52. Y. Kobayashi and R. Mahara: Proportional allocation of indivisible goods up to the least valued good on average, *Proceedings of the 33rd International Symposium on Algorithms and Computation (ISAAC 2022)*, 2022, 55:1–55:13.

53. T. Hanaka, M. Kiyomi, Y. Kobayashi, Y. Kobayashi, K. Kurita, and Y. Otachi: A framework to design approximation algorithms for finding diverse solutions in combinatorial problems, *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI 2023)*, 2023, pp. 3968–3976.
54. T. Ito, Y. Iwamasa, Y. Kobayashi, S. Maezawa, Y. Nozaki, Y. Okamoto, and K. Ozeki: Reconfiguration of colorings in triangulations of the sphere, *Proceedings of the 39th International Symposium on Computational Geometry (SoCG 2023)*, 2023, 43:1–43:16.
55. Y. Kobayashi: Optimal general factor problem and jump system intersection, *Proceedings of the 24th Conference on Integer Programming and Combinatorial Optimization (IPCO 2023)*, 2023, pp. 291–305.
56. T. Ito, Y. Iwamasa, N. Kakimura, Y. Kobayashi, S. Maezawa, Y. Nozaki, Y. Okamoto, and K. Ozeki: Rerouting planar curves and disjoint paths, *Proceedings of the 50th EATCS International Colloquium on Automata, Languages and Programming (ICALP 2023)*, 2023, 81:1–81:19.
57. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, S. Maezawa, Y. Nozaki, and Y. Okamoto: Hardness of finding combinatorial shortest paths on graph associahedra, *Proceedings of the 50th EATCS International Colloquium on Automata, Languages and Programming (ICALP 2023)*, 2023, 82:1–82:17.
58. T. Ito, Y. Iwamasa, N. Kamiyama, Y. Kobayashi, Y. Kobayashi, S. Maezawa, and A. Suzuki: Reconfiguration of time-respecting arborescences, *Proceedings of the 18th Algorithms and Data Structures Symposium (WADS 2023)*, 2023, pp. 521–532.
59. T. Ito, N. Kakimura, N. Kamiyama, Y. Kobayashi, and Y. Okamoto: Algorithmic theory of qubit routing, *Proceedings of the 18th Algorithms and Data Structures Symposium (WADS 2023)*, 2023, pp. 533–546.
60. Y. Kobayashi, R. Mahara, and Souta Sakamoto: EFX allocations for indivisible chores: matching-based approach, *Proceedings of the 16th International Symposium on Algorithmic Game Theory (SAGT 2023)*, 2023, pp. 257–270.
61. Y. Kobayashi and T. Noguchi: An approximation algorithm for two-edge-connected subgraph problem via triangle-free two-edge-cover, *Proceedings of the 34th International Symposium on Algorithms and Computation (ISAAC 2023)*, 2023, 43:1–43:10.
62. Y. Kobayashi, R. Mahara, and T. Schwarcz: Reconfiguration of the union of arborescences, *Proceedings of the 34th International Symposium on Algorithms and Computation (ISAAC 2023)*, 2023, 44:1–44:14.
63. Y. Kobayashi and T. Terao: Subquadratic submodular maximization with a general matroid constraint, *Proceedings of the 51st EATCS International Colloquium on Automata, Languages and Programming (ICALP 2024)*, 2024, 100:1–100:19.
64. Y. Iwamasa, Y. Kobayashi, and K. Takazawa: Finding a maximum restricted t-matching via Boolean edge-CSP, *Proceedings of the 32nd European Symposium on Algorithms (ESA 2024)*, 2024, 75:1–75:15.
65. Y. Kobayashi and T. Noguchi: Validating a PTAS for triangle-free 2-matching via a simple decomposition theorem, *Proceedings of SIAM Symposium on Simplicity in Algorithms (SOSA 2025)*, 2025, pp. 281–289.
66. A. Kawamura, Y. Kobayashi, and Y. Kusano: Pinwheel covering, *Proceedings of the 14th International Conference on Algorithms and Complexity (CIAC 2025)*, to appear.