Yuri Faenza – Curriculum Vitae

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Contact information

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A. Fields of specializations

Discrete optimization, Polyhedral combinatorics, Operations research, Matching theory and its applications, Market design

B. Education

2010 Ph.D. in Operations Research.
Sapienza University of Rome, Italy
Advisor: Prof. Gianpaolo Oriolo
Dissertation: *On the interplay between extended formulations and algorithms in some combinatorial problems*

2006 M. Sc. in Mathematical Engineering, *summa cum laude*
University of Rome Tor Vergata, Italy
Advisors: Prof. Gianpaolo Oriolo and Prof. Volker Kaibel
Thesis: *Graph coloring using orbitopes*

2004 B. Sc. in Management Science and Engineering, *summa cum laude*
University of Rome Tor Vergata, Italy
Advisors: Prof. Gianpaolo Oriolo and Prof. Benedetto Scoppola
Thesis: *The min-sum vertex cover on trees*

C. Employment

From 2016 Faculty member, Columbia University, New York, USA
Associate Professor (with tenure), IEOR department (from 2024)
Member, Data Science Institute (from 2024)
Associate Professor (w/o tenure), IEOR department (2022-2024)
Affiliated Member, Data Science Institute (2019-2024)
Assistant Professor, IEOR Department (2016-2021)
(on paternity leave during the Fall 2020, Spring 2023 semesters)

2015-2016 SNSF Ambizione Fellow
DISOPT group, EPFL, Lausanne, Switzerland

2014 Post-doctoral researcher
Mathematics Department, ULB, Brussels, Belgium

2012-2014 Post-doctoral researcher
DISOPT group, EPFL, Lausanne, Switzerland

2010-2012 Post-doctoral researcher
Mathematics Department, University of Padua, Italy

2006 Intern
Discrete Optimization group, Zuse Institute Berlin, Berlin, Germany

D. Honors, awards, scolarships, qualifications

2022 *Meta Research Award*

2022 Qualification as *Professore Ordinario* (Full Professor) in Operations Research and *Professore Associato* (Associate Professor) in Computer Science, Italian academic system

2021 *CAREER Award*, NSF

2018 *SEAS Distinguished Faculty Teaching Award*, The Fu Foundation School of Engineering, Columbia University, New York, USA

2017 Qualification as *Professore Associato* (Associate Professor) in Operations Research, Italian academic system

2013 Qualification as *Maître de Conférence*, French academic system

2012 *Lorenzo Brunetta* award for a Ph.D. thesis in Operations Research defended during the years 2010-11-12 (1 prize awarded every 3 years)

2007 *Adonet* scholarship, granted by the Marie Curie RTN

2007 *Sebastiano and Rita Raeli* award for the results in the M.Sc. program

2006-2009 Ph.D. Scholarship, granted by the Italian Ministry of Education

2006 *Leonardo* Scholarship for an internship within the European Union

Awards to students for joint research projects

2025 Ayoub Foussoul and Chengyue He: Honorable mention in the *INFORMS Optimization Society student paper award*

2025 Matias Villagra: *Best poster award* (as voted by a jury) and *Most popular poster award* (as voted by the workshop attendees) in the *MIP 2025 poster competition* (ca. 30 submissions)

2024-2026 Christopher En: *Cheung-Kong Innovation* Doctoral Fellowship

2022 Xuan Zhang: Finalist to the INFORMS *Doing good with good OR Paper Competition* and *IBM Service Science Best Student Paper Award*

2021 Xuan Zhang: Finalist to the INFORMS *George Nicholson Student Paper* Competition

2020 Jia Wan: *Rhodes China Scholarship* (0.7% acceptance rate) for graduate studies at Oxford

2020 Yunhao Tang: *Most popular poster award* (as voted by the workshop attendees) and runner-up for *Best poster award* (as voted by a jury) in the *MIP 2020 poster competition* (ca. 50 submissions)

2020-2021 Xuan Zhang: *Cheung-Kong Innovation* Doctoral Fellowship

2020 Manuel Aprile: *Lorenzo Brunetta prize* for a Ph.D. thesis in Operations Research defended during the years 2017-18-19 (1 prize awarded every 3 years)

2018 Xuan Zhang: *Best poster award*, Princeton optimization day (ca. 40 submissions)

E. Funding

2023-2026 *Novel Polyhedral Approaches to Integer and Quadratically Constrained Quadratic Programming.* Air Force Office of Scientific Research Role: PI (Co-Pi: D. Bienstock),

2022 *Fairness in two-sided heterogeneous online matchings* Meta Research Award. Role: PI (Co-PI: J. Sethuraman),

2021-2026 *CAREER: An algorithmic theory of matching markets* National Science Foundation.

2020-2023 *Linear extended formulations: packing, covering, and restricted SoS* Office of Naval Research.

2020-2022 *The Mixed-Integer Programming workshop 2020* Office of Naval Research.

2019-2020 *I–Corps: 3D Capturing Technology Based on Light Fields* National Science Foundation.

2017 Gift to continue the research on the topics of the *Ambizione* grant Swiss National Science Foundation.

2014-2017 *Ambizione: Tight formulations for 0/1 optimization problems* Swiss National Science Foundation.

F. Mentoring

Current Ph.D. students

Matias Villagra — From 2020, Ph.D. student at Columbia University, USA (with D. Bienstock) Tentative dissertation title: *À la carte Sherali-Adams hierarchies for integer programming*

Chengyue He — From 2021, Ph.D. student at Columbia University, USA (with J. Sethuraman) Tentative dissertation title: *Stable matchings and polyhedra*

Christopher En — From 2023, Ph.D. student at Columbia University, USA (with E. Balkanski) Tentative dissertation title: *Algorithms for two-sided markets*

Benjamin Rubio — From 2024, Ph.D. student at Columbia University, USA Tentative dissertation title: *Optimization for school and transportation systems*

Past Ph.D. students

Aapeli Vuorinen	Ph.D. 2025, Columbia University, USA Thesis: *Tradeoffs between Information, Tractability, and Fairness in Large Matching Markets* Current Position: Research staff member, Meta Research
Federico D'Onofrio	Ph.D. 2024, Sapienza University of Rome, Italy (with L. Palagi) Thesis: *Novel Mixed-Integer Optimization Models and Algorithms for Interpretable SVMs* Current Position: Post-Doctoral Researchers, IASI
Lingyi Zhang	Ph.D. 2022, Columbia University, USA, Thesis: *Incremental packing problems: algorithms and polyhedra* Current Position: Research staff member, Uber
Xuan Zhang	Ph.D. 2021, Columbia University, USA, Thesis: *Two-sided matching markets: models, structures, and algorithms* Current Position: Research staff member, Meta Research
Vladlena Powers	Ph.D. 2020, Columbia University, USA, Thesis: *Discrete optimization problems in popular matchings and scheduling* Current position: Senior data scientist, Amazon
Igor Malinović	Ph.D. 2019, EPFL, Switzerland (with F. Eisenbrand) Thesis: *On approximation algorithms and polyhedral relaxations for knapsack problems, and clustered planarity testing* Current position: Big data analyst, FELA Management AG
Manuel F. Aprile	Ph.D. 2018, EPFL, Switzerland (with F. Eisenbrand) Thesis: *On some problems related to 2-level polytopes* Current position: Assistant Professor, University of Padua, Italy

G. Selected invited talks (since 2016)

2025 Air Force Office of Scientific Research, USA
Title: *Novel Polyhedral Approaches to Integer and Quadratically Constrained Quadratic Programming*

2025 IDSIA Talks on Algorithms and Optimization, Switzerland
Title: *Stable matchings and Lattices: A marriage story*

2025 Mathematics Department, EPFL, Switzerland
Title: *Stable matchings and Lattices* (invited 6-hours Ph.D. seminar)

2025 Decision Support & Operations Research Seminar, U. of Fribourg, Switzerland
Title: *Data-driven Decision-making in School Matching*

2025 College of Management of Technology Seminar, EPFL, Switzerland
Title: *Data-driven Decision-making in School Matching*

2025 DIAG Seminar, Sapienza University of Rome, Italy
Title: *Data-driven Decision-making in School Matching*

2025 Algorithms, Graph Theory, and Complexity Seminar, U. of Geneva, Switzerland
Title: *Stable matchings and Lattices: A marriage story*

2025 Workshop *From Matchings to Markets*, Cargese, France
Title: *All finite lattices are matching lattices*

2025 Operations Research Seminar, Clemson University, USA
Title: *Symmetries and Lift-and-Project operators*

2025 Dagstuhl Workshop on Scheduling, Germany
Title: *Students in highly competitive markets: the case of the New York City specialized high school market*

2024 Oberwolfach Workshop in Combinatorial Optimization, Germany
Title: *Non-distributive lattices, stable matchings, and linear optimization*

2024 Air Force Office of Scientific Research, USA
Title: *Novel Polyhedral Approaches to Integer and Quadratically Constrained Quadratic Programming*

2024 ICERM, Brown University, USA
Title: *An algorithm for the assignment game, beyond additive valuations*

2024 New York University TCS Seminar, USA
Title: *Von Neumann-Morgenstern stability and internall closedness in matching theory*

2024 XIX Summer School in Discrete Mathematics, Chile
Title: *Matching Theory and School Choice* (invited 6-hours Ph.D. course)

2023 ICIAM 2023, Minisymposium Advances in Optimization, Japan
Title: *Two constructive techniques for producing linear extended formulations*

2023 The 24th ACM Conference on Economics and Computation (EC'23), UK
Title: *Discovering Opportunities in New York City's Discovery Program: Disadvantaged Students in Highly Competitive Markets*

2023 IASI CNR, Italy
Title: *Incremental packing problems*

2023 Sapienza University of Rome, Italy
Title: *Matching Theory and School Choice* (invited 6-hours Ph.D. course)

2023 Sapienza University of Rome, Italy
Title: *Stable matchings in choice function models: algorithms, polyhedra, and an application to school choice*

2023 Meta Research – Core Data Science group, USA
Title: *Algorithms for matching markets*

2023 RAIN Seminar, Stanford University, USA
Title: *Stable matchings in choice function models: algorithms, polyhedra, and an application to school choice*

2023 University of Southern California, USA
Title: *Stable matchings in choice function models: theory and applications to school choice*

2023 Carnegie Mellon University, USA
Title: *Two-sided matching markets, beyond stability*

2023 ENI, Italy
Title: *Formulating and solving complex problems with discrete optimization*

2023 ICERM, Brown University, USA
Title: *Matching Theory and School Choice* (invited 4-hours bootcamp)

2023 Aussois workshop in combinatorial optimization, France
Title: *von Neumann-Morgenstern stable sets and the lattice of stable matchings* (distinguished lecture, 7% of participants)

2022 Bocconi University, Italy
Title: *Stable matchings in choice function models: algorithms, polytopes, and school choice*

2022 University of Pavia, Italy
Title: *Incremental packing problems*

2022 Department of Education, New York City, USA
Title: *Discovering opportunities in New York City's discovery program*

2022 University of Wisconsin at Madison, USA
Title: *Stable matchings: lattices, polytopes, and applications*

2021 HIM Workshop in Approximation and Relaxation, Germany
Title: *Approximating popular and stable matchings*

2021 Oberwolfach Workshop in Combinatorial Optimization, Germany
Title: *Stable matchings, lattices, and polytopes*

2021 DOT (Discrete Optimization Talks) online seminar series (USA / Canada)
Title: *Stable matchings, lattices, and polytopes*

2021 AGCO (Algorithms, Games, Combinatorics and Optimization) online seminar series (Chile)
Title: *Some discrete optimization problems in matching markets*

2021 University of British Columbia, Canada
Title: *Some discrete optimization problems in matching markets*

2021 Simons Institute, UC Berkeley, USA
Title: *Algorithms for stable matching problems in choice function models*

2020 SODA conference, Salt Lake City, USA
Title: *Quasi-popularity, optimality, and extended formulations*

2020 Aussois workshop in combinatorial optimization, France
Title: *Popular matching problems with edge weights*

2019 SODA conference, San Diego, USA
Title: *Popular matchings and limits to tractability*

2019 Simons Institute, UC Berkeley, USA
Title: *Popular matching problems with edge weights*

2019 Joint Mathematics Meeting, Baltimore, USA
Title: *Bounded pitch inequalities for min knapsack: approximate separation and integrality gaps*

2018 Riken, Japan
Title: *Legal assignments and fast EADAM with consent via classical theory of stable matchings*

2018 Tel Aviv University, Israel
Title: *Balas formulation for the union of polytopes is optimal*

2018 Banff international research station, Canada
Title: *Bounded pitch inequalities for min knapsack: approximate separation and integrality gaps*

2018 Ecole Polythecnique Montreal, Canada
Title: *Legal assignments and fast EADAM with consent via classical theory of stable matchings*

2018 Rutgers, USA
Title: *Legal assignments and fast EADAM with consent via classical theory of stable matchings*

2018 MIP Workshop, Clemson University, USA
Title: *Balas formulation for the union of polytopes is optimal*

2018 EPFL, Switzerland
Title: *Balas formulation for the union of polytopes is optimal*

2017 Simons Institute, UC Berkeley, USA
Title: *Balas formulation for the union of polytopes is optimal*

2017 INFORMS annual meeting, Houston, USA
Title: *On knapsack problems over time*

2017 University of Padua, Italy
Title: *An invitation to 2-level polytopes*

2017 University of Rome Tor Vergata, Italy
Title: *An invitation to 2-level polytopes*

2017 IBM Watson research center, USA
Title: *Incremental knapsack problems*

2016 INFORMS annual meeting, Nashville, USA
Title: *2-level polytopes: recent results and open problems*

2016 Cargese workshop in combinatorial optimization, France
Title: *On largest volume simplices and sub-determinants*

2016 Georgia Tech, USA
Title: *Geometric approaches to discrete optimization problems*

2016 ULB, Belgium
Title: *On largest volume simplices and sub-determinants*

2016 CMS Session on Combinatorial, Geometric, and Computational Aspects of Optimization
Title: *An invitation to 2-level polytopes*

2016 TU Darmstadt, Germany
Title: *On largest volume simplices and sub-determinants*

H. Visiting positions (one month or more)

Jul 2025:	EPFL (Switzerland)
Jun 2023:	Sapienza University of Roma (Italy)
Jan-May 2023:	ICERM, Brown University, within the program *Discrete Optimization: Mathematics, Algorithms, and Computation*
Sept-Oct 2019:	Simons Institute, UC Berkeley, within the program *Online and Matching-Based Market Design*
Jun-Aug 2019:	University of Rome Tor Vergata (Italy)
Nov 2015:	HIM (Hausdorff Research Institute for Mathematics), Universität Bonn (Germany), within the trimester program *Combinatorial Optimization*
June 2012:	University of Waterloo (Canada)
Apr-May 2010:	University of Waterloo (Canada)
Oct-Nov 2009:	Université de Bordeaux (France)
May-Dec 2007:	Otto-von-Guericke-Universität Magdeburg (Germany)

I. Professional service

Founding member and first chair (2023-2024) of the Mixed-Integer Programming Society within the Mathematical Optimization Society, 2022.

Member of the ISMP (International Symposium in Mathematical Programming) 2024 Scientific Committee.

Member of the program commitees for the following conferences/workshops: WAOA 2025, ALGA 2025, EC 2025, EC 2024, APPROX 2023, IPCO 2023, CTW 2023, MIP 2022 (chair), MIP 2021, MIP 2020, IPCO 2020, CTW 2020.

Since 2024, Associate Editor for *Mathematical Programming*.

Since 2021, Associate Editor for *Discrete Optimization*.

Since 2020, Associate Editor for *Operations Research Letters*.

Since 2020, member of the organizing committee of the Cargese Workshop in Combinatorial Optimization.

In 2022-2023, vice-chair for Integer and Discrete Optimization of the INFORMS Optimization Society.

In 2022, cluster chair for Integer and Discrete Optimization at the INFORMS Annual Meeting.

In 2021-2022, committee member for the George Nicholson Prize (INFORMS).

Panelist for the NSF (twice), referee for proposals submitted to the Office of Naval Research (three times), the Italian Ministry of Education (twice), the Air Force Office of Scientific Research (three times), the Army Research Office (once) and the Romanian Ministry of education (once).

Reviewer for journals, such as Operations Research, Mathematical Program-

ming, Mathematics of OR, Siam Journal on Optimization, Algorithmica, Siam Journal on Discrete Mathematics, OR Letters, Naval Research Logistics, Discrete & Computational Geometry; and international conferences, such as: IPCO, SODA, STOC, ICALP, ESA.

Organizer of themed sessions at International Symposium on Mathematical Programming (ISMP) in 2015 and 2018; at the 2018 INFORMS Optimization Society Conference, and at the 2019 INFORMS General Meeting.

Organizer of cycles of seminars at the University of Rome Tor Vergata, Italy (2008-2010) and at the EPFL, Switzerland (2012-2014; 2015-2016); co-organizer of the IEOR–DRO seminars, Columbia University, USA (2017-2021).

K. Publications See my Google scholar profile for more information. The convention in the field is to list authors alphabetically: this applies to all papers, with the exception of paper 33, where we followed the machine learning community convention to list the main student contributor first. Students coauthors whose work on the paper I supervised are underlined.

In journals:

1. Y. Faenza, Cliff Stein, and J. Wan. Von Neumann-Morgenstern stability and internal closedness in matching theory. Accepted for publication in Mathematical Programming (2025)
2. Y. Faenza, C. He, and J. Sethuraman. Scarf's algorithm and stable marriages. Accepted for publication in Mathematics of Operations Research (2025).
3. Y. Faenza and L. Ferrarini. The total matching polytope of compete bipartite graphs. Operations Research Letters 56, 107144 (2024)
4. E. Balkanski, Y. Faenza, and M. Kubik. The simultaneous semi-random model for TSP. Mathematical Programming 206, pp. 305—332 (2024)
5. Y. Faenza, D. Segev, and L. Zhang. Approximation algorithms for the generalized incremental knapsack problem. Mathematical Programming 198(1), pp. 27-83 (2023)
6. Y. Faenza and X. Zhang. Affinely representable lattices, stable matchings, and choice functions. Mathematical Programming 197(2), pp. 721-760 (2023)
7. Y. Faenza, G. Muñoz, and S. Pokutta. New limits of Treewidth-based tractability in Optimization. Mathematical Programming 191 (2), pp. 559–594 (2022)
8. M. Aprile, M. Conforti, Y. Faenza, S. Fiorini, T. Huynh, and M. Macchia. Matrices, k-products, and 2-level polytopes. Accepted for publication in Discrete Applied Mathematics (2022)
9. Y. Faenza and T. Kavitha. Quasi-popular matchings, optimality, and extended formulations. Mathematics of Operations Research, 47(1), pp. 427-457 (2022)

10. Y. Faenza and X. Zhang. Legal Assignments and fast EADAM with consent via classical theory of stable matchings. Operations Research 70(3), pp. 1873-1890 (2022)
11. A. Cseh, Y. Faenza., T. Kavitha, and V. Powers. Understanding popular matchings via stable matchings. SIAM Journal on Discrete Mathematics, 36(1), pp. 188-213 (2022)
12. D. Bienstock, Y. Faenza, I. Malinovic, M. Mastrolilli, O. Svensson and M. Zuckerberg. On inequalities with bounded coefficients and pitch for the Min Knapsack polytope. Discrete Optimization, 44, p. 100567 (2022)
13. Y. Faenza, G. Oriolo, and G. Stauffer. Separation routine and extended formulations for the stable set problem in claw-free graphs. Mathematical Programming 188, pp. 53—84 (2021)
14. Y. Faenza, I. Mourtos, M. Samaris, and J. Sethuraman. (Un)stable matchings with blocking costs. Operations Research Letters 49 (5), pp. 655—662 (2021)
15. D. Bienstock, Y. Faenza, and X. Zhang. Pitch, extension complexity, and covering problems. Operations Research Letters 49 (3), pp. 357–364 (2021)
16. M. Aprile and Y. Faenza. Extended formulations from communication protocols in output-efficient time. Mathematical Programming, 183 (2020), pp. 41-–59
17. M. Conforti, M. Di Summa, and Y. Faenza. Balas formulation for the union of polytopes is optimal. Mathematical Programming, 180 (2020), pp. 311–326
18. A. Bohn, Y. Faenza, S. Fiorini, V. Fisikopoulos, M. Macchia, and K. Pashkovich. Enumeration of 2-level polytopes. Mathematical Programming Computation, 11-1 (2019), pp. 173–210
19. M. Aprile, A. Cevallos, and Y. Faenza. On 2-level polytopes arising in combinatorial settings. SIAM Journal on Discrete Mathematics Vol. 32, No. 3 (2018), pp. 1857-1886
20. M. Conforti, A. Del Pia, M. Di Summa, and Y. Faenza: Reverse Split rank. Mathematical Programming, 154-1 (2016), pp. 273–303
21. Y. Faenza, S. Fiorini, R. Grappe, and H.R. Tiwary. Extended formulations, non-negative factorizations, and randomized communication protocols, Mathematical Programming, 153-1 (2015), pp. 75–94
22. Y. Faenza and L. Sanità. On the existence of compact epsilon-approximation for the knapsack polytope in the original space. Operations Research Letters 43-3 (2015), pp. 339–342
23. M. Conforti, A. Del Pia, M. Di Summa, Y. Faenza, and R. Grappe. Reverse Chvátal-Gomory rank, SIAM Journal on Discrete Mathematics: 29-1 (2015), pp. 166–181

24. Y. Faenza, G. Oriolo, and G. Stauffer. Solving the weighted stable set problem in claw-free graphs via decomposition, Journal of the ACM, 61-4 (2014): 20
25. G. Averkov, M. Conforti, A. Del Pia, M. Di Summa, and Y. Faenza. On the convergence of the affine hull of the Chvátal-Gomory closures, SIAM Journal on Discrete Mathematics 27-3 (2013), pp. 1492–1502
26. F. Bonomo, Y. Faenza, and G. Oriolo. On coloring problems with local constraints, Discrete Mathematics, Vol. 312, Issues 12–13 (2012), pp. 2027–2039
27. Y. Faenza, G. Oriolo, and C. Snels. A fast algorithm to remove proper and homogeneous pairs of cliques (while preserving some graph invariants), Operations Research Letters, Vol. 39, Issue 3 (2011), pp. 213–217
28. Y. Faenza and V. Kaibel. Extended Formulations for Packing and Partitioning Orbitopes, Mathematics of Operations Research Vol. 34, No. 3 (2009), pp. 686–697

In conferences with published, peer-reviewed proceedings[1]

29. Y. Faenza, and A. Vuorinen. Longer lists yield better matchings. Proceedings of the 26th ACM Conference on Economics and Computation (EC) (2025)
30. K. Chandrasekaran, Y. Faenza, C. He, and J. Sethuraman. Scarf's algorithm on arborescence hypergraphs. Proceedings of the 52nd EATCS International Colloquium on Automata, Languages, and Programming (ICALP) (2025)
31. C. En and Y. Faenza. Non-distributive lattices, stable matchings, and linear optimization. Proceedings of the 25th Conference in Integer Programming and Combinatorial Optimization (IPCO) (2025)
32. E. Balkanski, C. En, and Y. Faenza. An Algorithm for the Assignment Game Beyond Additive Valuations. Proceedings of the 25th ACM Conference on Economics and Computation (EC) (2024)
33. Y. Faenza, A. Fossoul, and C. He. Two-stage stochastic stable matchings. Proceedings of the 24rd Integer Programming and Combinatorial Optimization (IPCO) (2024)
34. * Y. Faenza, Cliff Stein, and J. Wan. Von Neumann-Morgenstern stability and internal closedness in matching theory. Proceedings of the 24rd Integer Programming and Combinatorial Optimization (IPCO) (2024)
35. Y. Faenza, S. Gupta, and X. Zhang. Discovering opportunities in the New York City's discovery program: Disadvantaged students in highly competitive markets. Proceedings of the 24th ACM Conference on Economics and Computation (EC) (2023)

[1]We mark with * a conference paper whose journal version has also been published.

36. E. Balkanski, Y. Faenza, and N. Perivier. The power of greedy for online matching on the line. Proceedings of the 24th ACM Conference on Economics and Computation (EC) (2023)
37. * E. Balkanski, Y. Faenza, and M. Kubik. The simultaneous semi-random model for TSP. Proceedings of the 23rd Integer Programming and Combinatorial Optimization (IPCO), pp. 43–56 (2022)
38. * Y. Faenza and X. Zhang. Affinely representable lattices, stable matchings, and choice functions. Proceedings of the 22nd Integer Programming and Combinatorial Optimization (IPCO), pp. 89–103 (2021)
39. Y. Tang, S. Agrawal, and Y. Faenza. Reinforcement Learning for Integer Programming: Learning to Cut. Proceedings of 37th International Conference on Machine Learning (ICML), pp. 9367-9376 (2020)
40. M. Aprile, M. Conforti, Y. Faenza, S. Fiorini, T. Huynh, and M. Macchia. Recognizing Cartesian products of matrices and polytopes. Proceedings of 18th Cologne-Twente Workshop on Graphs and Algorithms (CTW), pp.361–375 (2020)
41. * Y. Faenza and T. Kavitha. Quasi-popular matchings, optimality, and extended formulations. Proceedings of the 31st ACM-SIAM Symposium on Discrete Algorithms (SODA), pp. 325–344 (2020)
42. * M. Aprile and Y. Faenza. Extended formulations from communication protocols in output-efficient time. Proceedings of the 20th Integer Programming and Combinatorial Optimization (IPCO), pp. 43–56 (2019)
43. Y. Faenza, T. Kavitha, V. Powers, and X. Zhang. Popular Matchings and Limits to Tractability. Proceedings of the 30th ACM-SIAM Symposium on Discrete Algorithms (SODA), pp. 2790–2809 (2019)
44. * Y. Faenza, I. Malinovic, M. Mastrolilli, and O. Svensson. On bounded pitch inequalities for the min-knapsack polytope. Proceedings of the 5th International Symposium on Combinatorial Optimization (ISCO), pp. 170-182 (2018)
45. Y. Faenza and I. Malinovic. A PTAS for the Time-Invariant Incremental Knapsack problem. Proceedings of the 5th International Symposium on Combinatorial Optimization (ISCO), pp. 157-160 (2018)
46. M. Aprile, Y. Faenza, S. Fiorini, T. Huynh, and M. Macchia. Extension complexity of stable set polytopes of bipartite graphs. Proceedings of the 43rd International Workshop on Graph-Theoretic Concepts in Computer Science (WG), pp. 75–87 (2017)
47. * M. Aprile, A. Cevallos, and Y. Faenza. On vertices and facets of combinatorial 2-level polytopes. Proceedings of the 4th International Symposium on Combinatorial Optimization (ISCO), pp. 177–188 (2016)
48. * A. Bohn, Y. Faenza, S. Fiorini, V. Fisikopoulos, M. Macchia, and K. Pashkovich. Enumeration of 2-level polytopes. Proceedings of the 23rd European Symposium on Algorithms (ESA), pp. 191–202 (2015)

49. M. Di Summa, F. Eisenbrand, Y. Faenza, and C. Moldenhauer. On largest volume simplices and sub-determinants, Proceedings of the 26th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), pp. 315–323 (2015)
50. A. Bock, Y. Faenza, C. Moldenhauer, and A. Ruiz-Vargas. Solving the stable set problem in terms of the odd cycle packing number. Proceedings of the 34th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS), pp. 187–198 (2014)
51. * M. Conforti, A. Del Pia, M. Di Summa, and Y. Faenza. Reverse Split rank, Proceedings of the 16th Conference on Integer Programming and Combinatorial Optimization (IPCO), pp. 234–248 (2014)
52. * M. Conforti, A. Del Pia, M. Di Summa, Y. Faenza, and R. Grappe. Reverse Chvátal-Gomory rank, Proceedings of the 16th Conference on Integer Programming and Combinatorial Optimization (IPCO), pp. 133–144 (2013)
53. * Y. Faenza, S. Fiorini, R. Grappe, and H.R. Tiwary: Extended formulations, non-negative factorizations, and randomized communication protocols, Proceedings of the 2nd International Symposium on Combinatorial Optimization (ISCO), pp. 129–140 (2012)
54. * Y. Faenza, G. Oriolo, and G. Stauffer. Separating stable sets in claw-free graphs via Padberg-Rao and compact linear programs, Proceedings of the Twenty-Third Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), pp. 1298–1308 (2012)
55. Y. Faenza, G. Oriolo, and G. Stauffer. An algorithmic decomposition of claw-free graphs leading to an $O(n^3)$-algorithm for the weighted stable set problem, Proceedings of the 22nd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), pp. 630–646 (2011)
56. * F. Bonomo, Y. Faenza, and G. Oriolo. On coloring problems with local constraints, Electronic Notes in Discrete Mathematics, 35 ((LAGOS) pp. 215–220 (2009)

In books:

57. Y. Faenza, G. Oriolo, G. Stauffer, and P. Ventura: Stable sets in claw-free graphs: a journey through algorithms and polytopes, in A. Ridha Mahjoub, editor, Progress in Combinatorial Optimization, Ed. Wiley-ISTE, pp. 41–80 (2011)

L. Teaching

Classes taught

Spring 2025	IEOR E8100: Advanced Combinatorial Optimization, IEOR, Columbia University, USA (for Ph.D. students)
Spring 2017-20, 22, 24, 25	IEOR E4008 (prev. E4573): Computational discrete optimization, IEOR, Columbia University, USA (for B.Sc. and M.Sc. students)
Fall 2017-18, 21, 24, 25	IEOR E4004: Optimizations models and methods, IEOR, Columbia University, USA (for M.Sc. students)
Spring 24	IEOR E4405 Production Scheduling IEOR, Columbia University, USA (for B.Sc. and M.Sc. students)
Winter 24	Matching Theory and School Choice XIX Winter School in Discrete Mathematics, Instituto de Sistemas Complejos de Valparaíso, Chile (invited school for Ph.D.s)
Fall 23	IEOR E6613 Optimization I IEOR, Columbia University, USA (for Ph.D. students)
Summer 23	Matching Theory and School Choice Sapienza University, Rome, Italy (invited Summer School for Ph.D.s)
Winter 23	Matching Theory and School Choice ICERM, Brown University, USA (invited Winter School for Ph.D.s)
Fall 22	CSORE 4231: Analysis of Algorithms I IEOR, Columbia University, USA (for M.Sc. students)
Fall 2021	IEOR E8100: Matching Markets & Algorithms, IEOR, Columbia University, USA (for Ph.D. students)
Spring 2018-21	IEOR E6614: Optimization II, IEOR, Columbia University, USA (for Ph.D. students)
Summer 2019	Stable matchings: basic theory and extensions, University of Rome Tor Vergata, Italy (invited Ph.D. course)
Spring 2017	IEOR E8100: Introduction to discrete optimization, IEOR, Columbia University, USA (for Ph.D. students)
Spring 2016	Strong relaxations for discrete optimization problems, EPFL, Switzerland (for Ph.D. students in Mathematics, Operations research, and Computer science)
Spring 2011-12	Discrete optimization, University of Padua, Italy (for B.Sc. students in Mathematics)