

# Chengyue He

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## CONTACT INFORMATION

500 West 120th St, 333 Mudd  
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## EDUCATION

### Columbia University, New York, NY, USA

Ph.D. in Operations Research, 2021-present  
Advisors: Yuri Faenza & Jay Sethuraman

### Columbia University, New York, NY, USA

M.S. in Operations Research, 2019-2020

### Zhejiang University, Hangzhou, China

B.S. in Mathematics, 2015-2019

Thesis: Almost everywhere convergence on the Schrödinger maximal function.

## RESEARCH INTERESTS

**Theory:** Mechanism design, matching markets, combinatorial optimization, complexity of linear programming and fixed-point computation.

**Applications:** Stable matchings, school choice, kidney exchange programs.

## PUBLICATIONS AND PREPRINTS

Authors listed in alphabetical order.

1. Yuri Faenza, Ayoub Foussoul and Chengyue He. Minimum Cut Representability of Stable Matching Problems. Major revision in *Operations Research* (2025).
  - Honorable mention in the INFORMS Optimization Society's 2025 Student Paper Prize.
2. Itai Feigenbaum, Chengyue He. Managing Self-Interested Behavior in Failure-Aware Kidney Exchange. Major revision in *Mathematics of Operations Research* (2025).
3. Yuri Faenza, Chengyue He and Jay Sethuraman. Scarf's Algorithm and Stable Marriages. *Mathematics of Operations Research* (2025).
4. Karthekeyan Chandrasekaran, Yuri Faenza, Chengyue He and Jay Sethuraman. Scarf's Algorithm on Arborescence Hypergraphs. *Proceedings of The 52nd EATCS International Colloquium on Automata, Languages, and Programming (ICALP)* (2025).
5. Yuri Faenza, Ayoub Foussoul and Chengyue He. Two-stage Stochastic Stable Matching. *Proceedings of The 25th Conference on Integer Programming and Combinatorial Optimization (IPCO)* (2024).

## ONGOING WORKS

1. Yuri Faenza, Chengyue He and Jay Sethuraman. Two-sided Tiered Random Matching Markets.
2. Yuri Faenza, Chengyue He and Jay Sethuraman. Scarf's algorithm and Stable Partitions. *Manuscript available upon request.*

- INVITED TALKS
- Minimum Cut Representability of Stable Matching Problems.* INFORMS Annual Meeting, Atlanta. (October 2025)
  - Scarf's Algorithm on Arborescence Hypergraphs.* The 52nd EATCS International Colloquium on Automata, Languages, and Programming (ICALP 2025), Aarhus University. (July 2025)
  - Linear Programming and Polyhedral Geometry.* PhD Tutorial Seminar at Columbia IEOR. (October 2024)
  - A Geometric Algorithm for Stable Matching Problems.* INFORMS Annual Meeting, Phoenix. (October 2023)
  - Scarf's Algorithm and Stable Matchings.* Modeling and Optimization: Theory and Applications (MOPTA) 2023, Lehigh University. (August 2023)
  - PPAD Hardness: The Complexity of Nash Equilibrium.* Seminar at ICERM, Brown University. (March 2023)
- TEACHING EXPERIENCE
- Instructor of Science Honors Program (SHP) at Columbia Engineering**
- Graph Theory by Example: Fall 2021, Spring 2022.
  - PhDs and postdocs in the sciences and mathematical disciplines teach courses in their area of study aimed at high school students.
- Teaching Assistant**
- IEOR 3609 Advanced Optimization (including recitation lectures): Spring 2025.
  - IEOR 6613 Optimization (PhD level): Fall 2023, Fall 2024.
- VISITS
- Spring 2023: Semester Program on Discrete Optimization: Mathematics, Algorithms, and Computation, ICERM, Brown University.
- Fall 2018, Spring 2019: Undergraduate exchange program at UC Berkeley.
- REFERENCES
- Yuri Faenza**, Associate Professor  
 Department of Industrial Engineering and Operations Research  
 Columbia University  
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- Jay Sethuraman**, Professor  
 Department of Industrial Engineering and Operations Research  
 Columbia University  
 (+1) 212-854-4931, [jay@ieor.columbia.edu](mailto:jay@ieor.columbia.edu)
- Itai Feigenbaum**, Associate Professor  
 Department of Computer Science  
 Lehman College, City University of New York  
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