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- EDUCATION** **Carnegie Mellon University, USA** Sep 2022–April 2027 (expected)
Ph.D. in Algorithms, Combinatorics and Optimization
Advisors: Gérard Cornuéjols and R. Ravi
- Shanghai Jiao Tong University, China** Sep 2018–June 2022
B.A. in Economics (major) & B.S. in Computer Science (minor)
- JOURNAL PUBLICATIONS** “Strongly Connected Orientations and Integer Lattices.” Ahmad Abdi, Gérard Cornuéjols, Siyue Liu, and Olha Silina. *Mathematics of Operations Research*, 2026. Extended abstract appeared at *Integer Programming and Combinatorial Optimization (IPCO)*, 2025.
- “Matroids are Equitable.” Hannaneh Akrami, Siyue Liu, Roshan Raj, and László A. Végh. *Combinatorica*, 2026.
- “A Min-Max Relation on Dcuts and Dijoins in Weighted Chordal Digraphs.” Gérard Cornuéjols, Siyue Liu, and R. Ravi. *Journal of Graph Theory*, 2026.
- “Approximately Packing Dijoins via Nowhere-Zero Flows.” Gérard Cornuéjols, Siyue Liu, and R. Ravi. *Combinatorica*, 2025. Extended abstract appeared at *Integer Programming and Combinatorial Optimization (IPCO)*, 2024 (**Best Paper Award**).
- “On the Smallest Support Size of Integer Solutions to Linear Equations.” Yatharth Dubey and Siyue Liu. *Mathematical Programming*, 2025.
- “Assortment Optimization under the Multinomial Logit Choice Model with Product-Specific Capacities.” Tim Woonghee Huh and Siyue Liu. *Operations Research Letters*, 2025.
- “Convexification Techniques for Fractional Programming.” Taotao He, Siyue Liu, and Mohit Tawarmalani. *Mathematical Programming*, 2024.
- CONFERENCE PUBLICATIONS** “Semi-Streaming Algorithms for Submodular Maximization under Random Arrival Order.” Niv Buchbinder, Moran Feldman, Siyue Liu, and Sherry Sarkar. *ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2027.
- “Lattice Structure and Efficient Basis Construction for Strongly Connected Orientations.” Siyue Liu and Olha Silina. *Integer Programming and Combinatorial Optimization (IPCO)*, 2026. Journal version under review at *Mathematics of Operations Research*.
- “Weighted Chairman Assignment and Flow-time Scheduling.” Siyue Liu and Victor Reis. *Innovations in Theoretical Computer Science (ITCS)*, 2026.
- “Minimum Cost Nowhere-Zero Flows and Cut-Balanced Orientations.” Karthekeyan Chandrasekaran, Siyue Liu, and R. Ravi. *International Colloquium on Automata, Languages, and Programming (ICALP)*, 2025. Journal version under review at *Mathematics of Operations Research*.
- “On the Congruency-Constrained Matroid Base.” Siyue Liu and Chao Xu. *Integer Programming and Combinatorial Optimization (IPCO)*, 2024.
- SUBMITTED PAPERS** “Proximity Theorem and FPT Algorithm for Minimum Group-labeled Matroid Bases” Siyue Liu, Taihei Oki, and Chao Xu. *Submitted*, 2026.

“Weighted Equitability and Matroid-Constrained Discrepancy”
 Kristóf Bérczi, Siyue Liu, Victor Reis, and Jakub Tarnawski. *Submitted*, 2026.

“Rooted Cut-balanced Orientations Are Equivalent to Cut-balanced Orientations.”
 Karthekeyan Chandrasekaran, Tamás Király, Siyue Liu, and R. Ravi. Under revision at *Electronic Journal of Combinatorics*, 2026.

HONORS& AWARDS

Presidential Fellowship	Mar 2026
INFORMS Optimization Society Student Paper Prize, Honorable Mention	Oct 2025
IPCO 2024 Best Paper Award	July 2024
Egon Balas Award for the Best Student Paper in OR/ACO	Mar 2024
Egon Balas Fellowship	Sep 2022–Sep 2024
Outstanding Graduate in Shanghai (Highest Honor)	June 2022
National Scholarship (top 1%)	Sep 2020–Sep 2021
National Scholarship (top 1%)	Sep 2018–Sep 2019
First Prize in the China National Mathematics Olympiad	Sep 2017
Second Prize in the China National Physics Olympiad	Sep 2017
Gold Medal in the 16th Chinese Girls’ Mathematics Olympiad (CGMO)	Aug 2017
First Prize in the China National Mathematics Olympiad	Sep 2016

TEACHING EXPERIENCE

Instructor, Carnegie Mellon University

- Special Topics on Combinatorial Optimization, Graduate Aug 2026–Oct 2026
- Covered special topics on matroids and submodular optimization.

Teaching Assistant, Shanghai Jiao Tong University

- Integer Programming and Combinatorial Optimization, Graduate Feb 2022–June 2022
- Covered special topics on packing and covering, submodular maximization, and polyhedral combinatorics in recitations.
- Optimization Methods in Economics, Undergraduate Feb 2021–June 2021
- Covered special topics on microeconomic theory and convex analysis in recitations.

Teaching Assistant, Carnegie Mellon University

- Integer Programming, Graduate Jan 2025–Mar 2025
- Integer Programming, Graduate Jan 2024–Mar 2024

EMPLOYMENT & VISITS

Microsoft Research , USA	May 2025–Aug 2025
Theory research intern in Algorithms Group	
Eötvös Loránd University , Hungary	Jan 2026–Feb 2026
Research visitor in Matroid Optimization Group	
University of Bonn , Germany	Nov 2025–Dec 2025
Research visitor in Algorithms and Optimization Group	
London School of Economics , UK	Sep 2023–Dec 2023
Research visitor in Optimisation and Algorithms Group	

TALKS

“One Good Away: Fair Allocation under Combinatorial Constraints”

- Young Researchers Workshop, Cornell, USA Oct 2026

“Weighted Equitability and Matroid-Constrained Discrepancy”

- Cargese Workshop on Combinatorial Optimization, Cargese, France Sep 2026

“Lattice Structure and Efficient Basis Construction for Strongly Connected Orientations.”

• IPCO, Padova, Italy	June 2026
• EGRES Seminar, Eötvös Loránd University, Budapest, Hungary	Feb 2026
• Aussois Workshop on Combinatorial Optimization, Aussois, France	Jan 2026
• ACORN, Carnegie Mellon University, Pittsburgh, USA	Oct 2025
“Weighted Chairman Assignment and Flow-time Scheduling.”	
• INFORMS Optimization Society Conference, Atlanta, USA	Mar 2026
• ITCS, Milan, Italy	Jan 2026
• Algorithms Group Seminar, Microsoft Research, Seattle, USA	Aug 2025
“Minimum Cost Nowhere-Zero Flows and Cut-Balanced Orientations.”	
• Trends in Approximation and Online Algorithms Workshop, Sydney, Australia	Dec 2025
• INFORMS Annual Meeting, Atlanta, USA	Oct 2025
• ICALP, Aarhus, Denmark	July 2025
• OR Seminar, Carnegie Mellon University, Pittsburgh, USA	May 2025
“Two Relaxations of Woodall’s Conjecture.”	
• INFORMS Annual Meeting, Seattle, USA	Oct 2024
“On the Congruency-Constrained Matroid Base.”	
• SIAM Conference on Optimization, Edinburgh, UK	June 2026
• Hertz Chair Group Seminar, University of Bonn, Bonn, Germany	Nov 2025
• Algorithms and Complexity Seminar, Carnegie Mellon University, Pittsburgh, USA	April 2025
• Math Seminar, Shanghai Jiao Tong University, Shanghai, China	Dec 2024
“Approximately Packing Dijoins via Nowhere-Zero Flows.”	
• Bonn Workshop on Combinatorial Optimization, Bonn, Germany	Nov 2025
• Submodular Workshop, Toyota Technological Institute, Chicago, USA	Aug 2025
• Algorithms and Logic Seminar, University of Electronic Science and Technology, Chengdu, China	Dec 2024
• IPCO, Wrocław, Poland	July 2024
• CS Theory Lunch, Carnegie Mellon University, Pittsburgh, USA	Jan 2024
• OR Seminar, Carnegie Mellon University, Pittsburgh, USA	Oct 2023
• Seminar on Combinatorics, Games and Optimisation, London School of Economics and Political Science, London, UK	Oct 2023
“Convexification Techniques for Fractional Programming.”	
• SIAM Conference on Optimization, Seattle, USA	June 2023

REVIEWER

Foundations and Trends in Theoretical Computer Science, Journal of Combinatorial Theory B, Mathematical Programming, Mathematics of Operations Research, SIAM Journal on Discrete Mathematics, Discrete Mathematics, Theoretical Computer Science, SODA 2027, ISAAC 2026, APPROX 2026, FOCS 2026, SWAT 2026, IPCO 2026, ITCS 2026, SODA 2026, FSTTCS 2025, ESA 2025, IPCO 2025, ICALP 2024.

LEADERSHIP& ACTIVITIES

OR/ACO student seminar organizer, Carnegie Mellon University	Jan 2024–Mar 2025
YinzOR speaker chair, Carnegie Mellon University	Aug 2024
YinzOR poster & flash talk chair, Carnegie Mellon University	Aug 2023

SKILLS

Programming Language: C++, Python, Julia, Matlab, R, $\text{\LaTeX}$

Language: Mandarin (native); English

Interest: Wushu (Chinese Kung Fu), Chinese lute.