

Yuan Shi

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Research Interests

I design incentive systems and technology-enabled interventions to advance efficient, sustainable operations in *resource-constrained and informal settings*, often involving *high-stakes decisions in underserved communities and emerging markets*. My work combines mechanism design and analytics with field work and experiments to *translate theory into deployable, field-tested solutions*, developed in close collaboration with industry and public-sector partners.

Education

Massachusetts Institute of Technology , Cambridge, MA, US PhD Candidate in Operations Research; GPA: 5.0/5.0 Advisor: Prof. Yanchong (Karen) Zheng	September 2021 – June 2026 (Expected)
Stanford University , Stanford, CA, US Master's in Management Science & Engineering; GPA: 4.078/4.3 (<i>equivalent to 4.0/4.0</i>)	September 2019 – June 2021
University of Cambridge , Cambridge, UK Bachelor of Arts in Natural Sciences (Physics); First Class Honors	September 2015 – June 2018

Publications / Submitted Papers

(*indicates lead author)

1. Incentivizing Smallholder Farmer Sustainability under Behavioral Regularities

Yuan Shi*, Iskandar Z Siregar and Yanchong Zheng, *Under review at Management Science*

- **Winner, MIT Operations Research Center (ORC) Best Student Paper Award, 2025**
- Accepted for presentation at 2025 MSOM Sustainable Operations SIG
- Accepted for presentation at 18th Annual Behavioral Operations Conference

2. **Toward Permanence: Sustainability Contract Design in Agriculture**

Yuan Shi*, Joann de Zegher and Yanchong Zheng, *Soon to be re-submitted to Management Science*
Previously circulated as "[Incentive Design for Sustainable Practices in Smallholder Supply Chains](#)"

- Accepted for presentation at 2024 MSOM Main Conference
- Accepted for presentation at 2025 Early-Career Sustainable Operations Management Workshop

3. Two-sided Benefits of Price Transparency in Smallholder Supply Chains

Yuan Shi*, Joann de Zegher and Irene Lo, *Accepted at Management Science*

- **2nd Place, POMS College of Supply Chain Management Best Student Paper Award**

- Accepted for presentation at 2022 *Marketplace Innovation Workshop*
- Accepted for presentation at 2022 *ACM conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO'22)*

4. **Surgical Scheduling via Optimization and Machine Learning with Long-Tailed Data**

Yuan Shi*, Saied Mahdian, Jose Blanchet, Peter Glynn, Andrew Y. Shin, David Scheinker
Health Care Management Science, September 4, 2023, Vol. 26, 692-718

- Featured as outstanding publication in Health Care Management Science at 2024 *INFORMS Annual Meeting*

5. **Criteria for Early Pacemaker Implantation in Patients with Postoperative Heart Block After Congenital Heart Surgery**

Son Q Duong, Yuan Shi, David Scheinker, Claudia Algaze, et al.

Circulation: Arrhythmia and Electrophysiology, November 2022, 15(11), e011145

Work in Progress

6. **Optimizing Nonprofit Warehouse Operations under Display-Dependent Demand**

With Mahyar Eftekhari and Yanchong Zheng, in collaboration with Midwest Food Bank (Arizona),
In preparation for Manufacturing & Service Operations Management

- Accepted for presentation at 2025 *MSOM Main Conference* ([extended abstract](#))

7. **Payment Models for Climate-Targeted Farming: A Field Experiment in India**

With Alp Sungu and Yanchong Zheng, in collaboration with the World Bank 2030 Water Resources Group, *Pilot experiment under way* (AEA registry: [15873](#))

Selected Talks

“Incentivizing Smallholder Farmer Sustainability under Behavioral Regularities”

- 2025 *INFORMS Annual Meeting* (upcoming)
- 2025 *MSOM Sustainable Operations SIG*
- 18th Annual Behavioral Operations Conference, 2025
- 35th Annual *POMS Conference*, 2025

“Optimizing Nonprofit Warehouse Operations under Display-Dependent Demand”

- 2025 *INFORMS Annual Meeting* (upcoming)
- 2025 *MSOM Main Conference*
- 2025 *INFORMS Computing Society Conference*
- 35th Annual *POMS Conference*, 2025

“Incentive Design for Sustainable Practices in Smallholder Supply Chains”

- 2025 Early-Career Sustainable Operations Management Workshop
- 2024 MSOM Main Conference
- 34th Annual POMS Conference, 2024
- 2023 and 2024 INFORMS Annual Meeting

“Two-sided Benefits of Price Transparency in Smallholder Supply Chains”

- 35th Annual POMS Conference, 2025
- 2022 INFORMS Annual Meeting
- 2022 Marketplace Innovation Workshop

“Surgical Scheduling via Optimization and Machine Learning with Long-Tailed Data”

- 2024 INFORMS Annual Meeting

Selected Scholarships and Awards

Winner, MIT Operations Research Center (ORC) Best Student Paper Award	2025
2 nd Place, POMS College of Supply Chain Management Best Student Paper	2025
Martin Fellowship, MIT Martin Family Society of Fellows for Sustainability	2025-2026
Rosemary Murray Scholarship for Academic Excellence	2016, 2017 and 2018
Silver Medal, Singapore Physics Olympiad	2014
Gold Medal, Singapore Mathematics Olympiad	2011

Industry Experience

Pempem, Montreal, Canada

Summer Research Intern	Summer 2023
▪ <i>Developed centralized, data-driven pricing algorithms for smallholder commodity supply chains</i>	

Morgan Stanley, London, UK

Full-time Fixed Income Analyst	June 2018 – July 2019
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- *FX derivative structuring and pricing for hedge fund clients in Europe and Asia*

Sales and Trading Summer Analyst	Summer 2017
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Teaching Experience

Teaching Assistant, 15.769 Operations Strategies (Spring 2025), MIT

- *MIT Sloan MBA Elective with 84 MBA students*
- *Held weekly office hours, graded cases and reports. Student Rating: 6.9/7.0*

Instructor, 15.S60 Computing in Optimization and Statistics (Winter 2025), MIT

- *Led a 3-hour data analytics session using R with 22 first-year doctoral students*

Teaching Assistant, MS&E 220 Probabilistic Analysis (Summer 2020), Stanford University

- *Graduate-level class with 33 students*
- *Developed material, held weekly office hours, graded assignments and exams.*

Professional Services and Volunteering

Reviewer for *Health Care Management Science, Manufacturing & Service Operations Management*

Coordinator, MIT ORC Seminar Series

2025

Session Chair, 2025 INFORMS Annual Meeting

2025

Session Chair, 35th Annual POMS Conference

2025

Global Impact Manager, Bridges for Enterprise

2019 – Present

- *Co-led impact research division, tracking the nonprofit's social impact and publishing annual reports for management and fundraising.*

Skills

Programming / Technical Tools: Python, R, Julia, LaTeX, Gurobi, SSH

Languages: English (fluent) and Mandarin Chinese (native)