Yuan Shi

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Research Interests & Methodologies

I apply data-driven optimization, game theory, behavioral and field experiments for social good, in domains including smallholder supply chains, sustainability, nonprofit and healthcare operations. I am driven by developing new, practical solutions with real-world impact that addresses the United Nations Sustainable Development Goals.

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 – Present

Stanford University, Stanford, CA, US
Master's in Management Science & Engineering; GPA: 4.078/4.3 *(equivalent to 4.0/4.0)*
September 2019 – June 2021

University of Cambridge, Cambridge, UK
Bachelor of Arts in Natural Sciences (Physics); First Class Honors
September 2015 – June 2018

Journal Publications

(*indicates first author by contribution)

1. **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)*

2. **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*

3. **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*

Working Papers

4. **Incentive Design for Sustainable Practices in Smallholder Supply Chains**
    Yuan Shi*, Joann de Zegher and Yanchong Zheng, *Submitted*
    - Accepted for presentation at *2024 MSOM Main Conference*
    - Accepted for presentation at *2025 Early-Career Sustainable Operations Management Workshop*

5. **Incentivizing Smallholder Supplier Sustainability under Behavioral Regularities**
    Yuan Shi*, Iskandar Z Siregar and Yanchong Zheng, *Working paper*
    - 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*

6. **Optimizing Nonprofit Warehouse Operations under Display-Dependent Demand**
    With Mahyar Eftekhar, Yanchong Zheng and collaborators from Midwest Food Bank (Arizona),
    Work in progress
    - Accepted for presentation at *2025 MSOM Main Conference*

Selected Talks

"Incentivizing Smallholder Supplier Sustainability under Behavioral Regularities"
- 2025 INFORMS Annual Meeting (upcoming)
- 2025 MSOM Sustainable Operations SIG (upcoming)
- 18th Annual Behavioral Operations Conference, 2025 (upcoming)
- 35th Annual POMS Conference, 2025

"Optimizing Nonprofit Warehouse Operations under Display-Dependent Demand"
- 2025 INFORMS Annual Meeting (upcoming)
- 2025 MSOM Main Conference (upcoming)
- 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

Scholarships and Awards

Winner, MIT Operations Research Center (ORC) Best Student Paper Award	**2025**
2nd 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**

Teaching Experience

Teaching Assistant, 15.769 Operations Strategies (Spring 2025, upcoming), 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.*

Service and Volunteering

Coordinator, MIT ORC Seminar Series	**2025**
Session Chair, 2025 INFORMS Annual Meeting	**2025**
Session Chair, 35th Annual POMS Conference	**2025**
Reviewer for Health Care Management Science	**2024**
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.*

Employment

Pempem, Montreal, Canada

Summer Research Intern   **Summer 2023**
- *Developed centralized, data-driven pricing algorithms for smallholder commodity supply chains*

Morgan Stanley, London, UK

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

Sales and Trading Summer Analyst   **Summer 2017**

Languages

English (fluent) and Mandarin Chinese (native)