

# Yuan Shi

MIT Operations Research Center  
1 Amherst Rd  
Cambridge, MA 02142

(650)-526-8896 | [yuansh@mit.edu](mailto:yuansh@mit.edu)  
<https://yuanshi1.github.io/>  
Last updated: August 2025

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## Research Interests & Methodologies

I apply data-driven optimization, game theory, behavioral and field experiments for social good, in domains such as smallholder supply chains, sustainability and social-sector operations. I am driven by developing innovative, practical solutions with real-world impact that addresses the [United Nations Sustainable Development Goals](#).

## Education

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<b>Massachusetts Institute of Technology</b> , Cambridge, MA, US	<b>September 2021 – Present</b>
PhD Candidate in Operations Research; GPA: 5.0/5.0	
Advisor: Prof. Yanchong (Karen) Zheng	

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

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

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## Publications / Papers under Review

(\*indicates first author by contribution)

### 1. [Incentivizing Smallholder Farmer Sustainability under Behavioral Regularities](#)

Yuan Shi\*, Iskandar Z Siregar and Yanchong Zheng, *Submitted to 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. [Incentive Design for Sustainable Practices in Smallholder Supply Chains](#)

Yuan Shi\*, Joann de Zegher and Yanchong Zheng, *Submitted to Management Science*

- 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

## **Working Papers / Work in Progress**

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6. **Optimizing Nonprofit Warehouse Operations under Display-Dependent Demand**  
 With Mahyar Eftekhari and Yanchong Zheng, in collaboration with Midwest Food Bank (Arizona), *Manuscript in preparation*
- Accepted for presentation at 2025 *MSOM Main Conference*
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 data collection and analysis in progress*

## **Selected Talks**

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### **“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
- 34<sup>th</sup> 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**

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

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**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**

## **Teaching Experience**

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**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.*

## Service and Volunteering

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**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**, 35<sup>th</sup> 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.*

## Languages

English (fluent) and Mandarin Chinese (native)