

# 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

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

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## 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

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

**Yuan Shi\***, 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

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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

## **Selected 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**

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| 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 |
|--------------------------------|-----------------------|

- *FX derivative structuring and pricing for hedge fund clients in Europe and Asia*

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| Sales and Trading Summer Analyst | Summer 2017 |
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## **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.*

## Professional Services 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.*

## Skills

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

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

### *US Work Authorization:*

*Eligible for AOS EAD (I-140 approved; filing current). H-1B sponsorship not required.*