

Yifan Feng

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ACADEMIC EMPLOYMENT

National University of Singapore

Assistant Professor, Department of Analytics & Operations, NUS Business School 2020 - Present
Affiliated Faculty, Institute of Operations Research and Analytics 2020 - Present

EDUCATION

University of Chicago

PhD in Management Science/Operations Management (Advisor: René Caldentey) 2014 - 2020

University of Minnesota

BS in Mathematics, *summa cum laude*, graduated with high distinction 2011 - 2014

RESEARCH

RESEARCH INTERESTS

information collection and aggregation, learning in presence of strategic behavior, sequential experimental design, random graphs, business applications in markets, platforms, and revenue management

RESEARCH PAPER OUTLINE

(The labels that follow, e.g., [J1], refer to the papers below.)

Information collection, experimental design, and preference learning: J1, W1, W3, P3

Learning in presence of human (e.g., strategic) behavior: J2, W2, W4, P1, P2

E-commerce platform operations and demand fulfillment: J3, P4

PUBLICATIONS

(† represents PhD student I advise or collaborate with. ‡ represents an industry collaborator.)

- [J1] Yifan Feng, René Caldentey and Christopher T. Ryan. Robust learning of consumer preferences. **Operations Research**. 70(2):918-962. [Link]
- [J2] John R. Birge, Yifan Feng, N. Bora Keskin and Adam Schultz. Dynamic learning and market making in spread betting markets with informed bettors. **Operations Research**. 69(6):1746-1766. [Link]
- Preliminary version in *Proceedings of the 2019 ACM Conference on Economics and Computation (EC '19)*.
 - Featured in *Chicago Booth Review*
- [J3] Yifan Feng, René Caldentey, Linwei Xin, Yuan Zhong, Bing Wang[†], and Haoyuan Hu[†]. Designing sparse graphs for stochastic matching with an application to middle-mile transportation management. Forthcoming in **Management Science**. [Link]

WORKING PAPERS

- [W1] Yifan Feng, Yuxuan Tang[†]. A Mallows-type model for preference learning from (ranked) choices. Under revision at **Management Science**. [Link]
- Preliminary version in *Advances in Neural Information Processing Systems 35 (NeurIPS '22)*
 - Third prize, CSAMSE (*Chinese Scholars Association for Management Science and Engineering*) best paper award competition 2023
- [W2] Qinzhen Li[†], Yifan Feng, Hongfan Chen. Learning to rank under strategic “brush wars.” [Link]
- Preliminary version accepted in *2024 ACM Conference on Economics and Computation (EC '24)*.
 - Preliminary version selected for *MSOM Service SIG 2023 conference*
- [W3] Junwen Yang[†], Yifan Feng. Simple algorithms for learning to select and rank from choice-based feedback. [Link]
- Preliminary version in *Proceedings of the 40th International Conference on Machine Learning (ICML '23)*

- [W4] Jingying Ding[†], Yifan Feng, Ying Rong. A behavioral model for multi-armed bandits: theoretical framework and experimental evidence.
- [W5] Shengyu Cao[†], Simai He, Zizhuo Wang, Yifan Feng. Optimal partition for a multi-type queueing system. Under revision at **Mathematics of Operations Research**. [Link]

SELECTED WORK IN PROGRESS

- [P1] Information aggregation, market making, and strategic manipulation (with J. Birge and B. Keskin)
- [P2] Learning to lend under adverse selection (with J. Keppo)
- [P3] On the value of adaptivity in sequential experiments (with H. Zhu and T. Ni)
- [P4] Understanding labor supply in gig economy: evidence from a logistics platform (With J. Keppo and S. Hu)
- [P5] Credit rating design under adverse selection (With Q. Li and J. Keppo)

TEACHING

NATIONAL UNIVERSITY OF SINGAPORE

Instructor

- DBA5109: Quantitative Risk Management (MS in Bus. Analytics) Semester 2 since AY 20/21
- DBA3713: Analytics for Risk Management (BBA spec. Bus. Analytics) Semester 1/2 since AY 21/22

INDUSTRY COLLABORATION

- **E-commerce platform and logistics solutions:** Cainiao Network (Alibaba Group), Pickup
- **Semiconductor manufacturing:** Kulicke & Soffa
- **Online content platform:** Kwai (Kuaishou)

PRESENTATIONS

UNIVERSITIES

- 2024
 - New York University, Stern Operations Management seminar (scheduled)
 - Boston University, Questrom Operations & Technology Management seminar (scheduled)
- 2023
 - MIT, Data science lab seminar presented [W1,W3]
 - University of Toronto, Rotman young scholar virtual seminar series presented [W2]
 - Hong Kong University of Science and Technology (HKUST), IEDA seminar presented [W2]
 - Singapore Management University, Operations Management seminar presented [W1]
 - Hong Kong University, Innovation and Information Management seminar presented [W1]
 - Chinese University of Hong Kong (CUHK), Joint OM/SEEM seminar presented [W1]
 - Chinese University of Hong Kong - Shenzhen, Joint SDS/SME seminar presented [W1]
- 2021:
 - Nanyang Business School, IT&OM virtual seminar presented [J3]
 - City University of Hong Kong, Management Science virtual seminar presented [J3]
 - Zhejiang University, DS&EM virtual seminar presented [J3]
- 2020:
 - University of Southern California, Marshall DSO seminar presented [J1]
 - Hong Kong University of Science and Technology (HKUST), Joint IEDA/ISOM Seminar presented [J1]

- The Chinese University of Hong Kong (CUHK), SEEM seminar presented [J1]
- Nanjing University, MS&E virtual seminar presented [J1]
- 2019:
 - The University of Texas at Austin, McCombs Decision Science seminar presented [J1]
 - Boston College, Carroll Operations Management seminar presented [J1]
 - NUS Business School, DAO seminar presented [J1]
 - Chinese University of Hong Kong, Shenzhen, iDDA seminar presented [J1]
 - Baruch College, Operations Management seminar presented [J1]
 - Tongji University, AIB seminar presented [J1]
- 2018, 2016: University of Chicago, Booth OM brown bag seminar presented [J1, J2]

SELECTED CONFERENCES AND WORKSHOPS

- INFORMS (*INFORMS Annual Meeting*): 2014, 2016-23
- MSOM (*INFORMS MSOM Conference*): 2017, 2023
 - Service SIG Meeting 2023
 - Supply chain SIG Meeting 2022
 - iFORM SIG Meeting 2019
- RMP (*INFORMS Revenue Management and Pricing Section Conference*): 2018-19, 2022-23
- APS (*INFORMS Applied Probability Society Conference*) 2023
- Others:
 - EC (*ACM Conference on Economics and Computing*), EC-Learning (*ACM EC Workshop on Learning in Presence of Strategic Behavior*), MIW (*Marketplace Innovation Workshop*), POMS (*POMS Annual Conference*), POMS-HK (*POMS-HK International Conference*), CSAMSE (*International Conference of the Chinese Scholars Association for Management Science and Engineering*)

OTHER INVITED PRESENTATIONS

- DAO Young Scholar Workshop 2024
- Guest speaker, S3 (NUS-CUHK-SHUFU) Optimization Day 2022
- Speaker, Alibaba (Cainiao Network) 2018, 2019, 2021
- Speaker, ZJU International Summer School for Machine Learning and Data-driven Decision Management 2021
- Guest speaker, UIUC PhD course: *Stochastic Models* 2020

HONORS AND AWARDS

GRANTS

(Total support as PI/co-PI: ~S\$1.4 million or ~US\$1.03 million)

- PI, Ministry of Education Academic Research Fund Tier 1, S\$180,000 2022-2025
 - Title: “*Efficient and robust information acquisition for platforms and markets*”
- PI, NUS Business School Start-Up Grant, S\$90,000 2021-2025
 - Title: “*Information aggregation and acquisition for platform operations*”
- PI, NUS-Pickupp Research Collaboration Grant, S\$150,800 2022-2024
 - Title: “*Data driven pricing and facility network optimization for Pickupp’s two-sided logistics platform*”
- Co-PI, AI Singapore 100 Experiments and Kulicke & Soffa Research Grants, S\$908,740 2022-2025
 - Title: “*Smart manufacturing through predictive process monitoring using machine learning*”
 - PI: Jussi Keppo
- Team member, Alibaba Research Grant, US\$60,000 2020-2021
 - Title: “*Building a flexible logistics network in the era of ‘New Retail’*”
 - PIs: René Caldentey, Linwei Xin, Yuan Zhong
- ACM-EC Student Travel Grant, EC '19 2019
- Undergraduate Research Opportunities Program (Supervisor: Zizhuo Wang), Univ. of Minnesota 2013

AWARDS

- Third prize in *CSAMSE best paper award competition* 2023
- Honorable mention in *POMS-HK Best Student Paper Competition* 2019
- Booth School of Business Ph.D. Fellowship University of Chicago, 2014-2019
- Ella Thorp Math Scholarship University of Minnesota, 2012-2014

MEDIA COVERAGE

1. Pickupp and NUS collaborate to develop solutions aimed at revolutionising the logistics industry. [*Media OutReach*] [*Yahoo! News*] [*Technode Global*] [*NEWS AGENCY by NewsServices.com*], July 21 2022. [*Disruptive Tech Asia*], July 22 2022 [*Riauone (in Indonesian)*], July 24 2022.
2. How to create a better supply chain. [*Chicago Booth Review*], February 16, 2022.
3. How bookies can outwit smart bettors. [*Chicago Booth Review*], June 10, 2019.

SERVICE

REVIEWING SERVICE

- Journal: *Management Science, Operation Research, Mathematical Programming, Manufacturing & Service Operations Management, Operation Research Letters, Service Science, Information Processing and Management*
 - *Management Science* Meritorious Service Award 2022, 2023
- Conference: *MSOM SIG Annual Conferences (Service, Supply Chain), ACM Conference on Economics and Computation (EC)*
- Grant: Hong Kong Research Grants Council *General Research Fund (GRF)*
- Competition Judge: *Service Science Section's Best Student Paper Award (2023), POMS-HK Best Student Paper Competition (2024)*

CONFERENCE ORGANIZATION

- Workshop co-chair: UChicago Workshop on E-Commerce and Logistics 2022
- Session chair/co-chair: INFORMS 2016, 2019, 2021, 2023; RM&P 2018; CSAMSE 2023; POMS-HK 2023, 2024

ADVISING

- PhD Student
 - Qinzhen Li: co-authored [W2, P5]
 - Yuxuan Tang (as main advisor, co-advised with Xiaobo Li): co-authored [W1]
 - Sixing Hu (as main advisor, co-advised with Jussi Keppo): co-authored [P4]
 - Junwen Yang (as co-advisor, main advisor: Vincent Tan): co-authored [W3]
 - Huijun Zhu (as co-advisor, main advisor: Joel Goh): co-authored [P3]
 - Yuda Ho (as co-advisor, main advisor: Jussi Keppo)
- Postdoc
 - Jingying Ding: co-authored [W4]

SERVICE TO NUS

- Administrative
 - NUS DAO faculty recruiting committee Committee member, AY 21-22
 - NUS DAO PhD admission committee Committee member, AY 21-22, 22-23, 23-24
 - NUS DAO/IORA seminar series Co-organizer, AY 21-22, 22-23, 23-24
- Examiner/Interviewer
 - PhD thesis proposal/defense examiner (thesis committee member): Qiuyu Zhu, Hailong Sun, Ruiting Zuo, Ek Hong Lim, Shuo Wang, Yangge Xiao, Tu Ni, Nan Ke
 - PhD summer paper examiner: Ruijiu Mao
 - Undergraduate honours thesis examiner: Elysia Ziyi Tan
 - Interviewer: NUS Masters in Business Analytics (MSBA) program (AY 22-23)