Dongwook Shin

Contact Information	Department of ISOM HKUST Business School Clear Water Bay, Kowloon, Hong Kong	*Voice:* +852 3469 2127 *E-mail:* dwshin@ust.hk *Web:* dwshin.people.ust.hk

Research Interests

Dynamic pricing, social learning, information sharing, e-commerce, omnichannel retailing, machine learning and sequential decision making in operations research context, business and sports analytics

Academic Positions

ISOM Department, HKUST Business School, 2017-present
    Assistant Professor, Operations Management

Education

Graduate School of Business, Columbia University, New York, NY
    Ph.D., Decision, Risk, and Operations, 2017
    Topic: Algorithms for Ordinal Optimization and Dynamic Pricing in E-commerce
    Advisors: Mark Broadie and Assaf Zeevi

Columbia University, New York, NY
    M.S., Operations Research, Feb 2012

KAIST, Daejeon, South Korea
    B.S., Industrial and Systems Engineering, Feb 2010

Published Papers

Dongwook Shin, Mark Broadie[1], and Assaf Zeevi[2]. 2018. Tractable Sampling Strategies for Ordinal Optimization. *Operations Research*, 66(6):1693-1712.

Dohyun Ahn[3] and Dongwook Shin. 2020. Ordinal Optimization with Generalized Linear Models. *Proceedings of 2020 Winter Simulation Conference: 3008-3019.*

Dongwook Shin, Mark Broadie, and Assaf Zeevi. 2022. Practical Nonparametric Sampling Strategies for Quantile-based Ordinal Optimization. *INFORMS Journal on Computing*, 34(2): 752-768.

Dongwook Shin and Assaf Zeevi. 2023. Product Quality and Information Sharing in the Presence of Reviews. *Management Science*, Articles in Advance:1-20.

Dongwon Lee[4], Anandasivam Gopal[5], Dokyun Lee[6], and Dongwook Shin. 2023. Micro-Giving: On the Use of Digital Nudges and Economic Incentives in Mobile Charitable Giving. *MIS Quarterly*, 47(3):1101-1146.
 - ICIS 2017 Best Conference Paper
 - ICIS 2017 Best Session Paper
 - AOM 2018 Best Student Paper
 - INFORMS Runner-up Best E-Business 2018

Dongwook Shin, Stefano Vaccari[7], and Assaf Zeevi. 2023. Dynamic Pricing with Online Reviews. *Management Science*, 69(2):824-845.

Costis Maglaras[8], Marco Scarsini[9], Dongwook Shin, and Stefano Vaccari. 2023. Product Ranking in the Presence of Social Learning. *Operations Research*, 71(4):1136-1153.

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[1]Mark Broadie was my thesis co-advisor at the Columbia Business School.
[2]Assaf Zeevi was my thesis co-advisor at at the Columbia Business School.
[3]Dohyun Ahn is an assistant professor at Chinese University of Hong Kong and a research collaborator.
[4]Dongwon Lee is an associate professor at the HKUST Business School and a research collaborator.
[5]Anandasivam Gopal is a professor at Nanyang Technological University and a research collaborator.
[6]Dokyun Lee is an associate professor at Boston University and a research collaborator.
[7]Stefano Vaccari is at ENEL Global Services, Italy, and a research collaborator
[8]Costis Maglaras is a professor at the Columbia Business School and a research collaborator.
[9]Marco Scarsini is a professor at the LUISS University and a research collaborator

PAPERS UNDER REVIEW	Bharadwaj Kadiyala[10] and Dongwook Shin. "Social Learning with Polarized Preferences on Content Platforms." Major Revision invited by *Manufacturing & Service Operations Management* in 2023. - Draft available in SSRN - 2023 Service Section Best Cluster Paper Competition, First Place Dohyun Ahn, Dongwook Shin, and Assaf Zeevi. "Feature Misspecification in Sequential Learning Problems." Minor Revision invited by *Management Science* in 2022. - Draft available in SSRN Huijun Chen[11], Ying-Ju Chen[12], Sunghyuk Park[13], and Dongwook Shin. "Multichannel Advertising: Budget Allocation in the Presence of Spillover and Carryover Effects." Major Revision invited by *Manufacturing & Service Operations Management* in 2023. - Draft available in SSRN Mark Broadie and Dongwook Shin. "A Golf Putting Model for Optimal Targeting Strategy and Attribution Analysis." Submitted to *Journal of Quantitative Analysis in Sports* in 2023. - Draft available upon request Jae-Hyuck Park[14] and Dongwook Shin. "Channel Selection and Coordination in Omnichannel Retailing with Strategic Customers under Product Value Uncertainty." Submitted to *European Journal of Operational Research* in 2023. - Draft available upon request
WORKING PAPERS	Etienne Boursier[15], Vianney Perchet[16], Marco Scarsini, and Dongwook Shin. 2023. "Social Learning with Multivariate Features." Soo-Haeng Cho[17], Eunji Kim[18], Sangwon Kim[19], and Dongwook Shin. 2023. "Product Quality in the Presence of Social Learning from Multi-Dimensional Online Ratings." Arian Aflaki[20], Bharadwaj Kadiyala, and Dongwook Shin. 2023. "Signaling Quality with Delayed Incentives." Woonam Hwang[21], Bharadwaj Kadiyala, and Dongwook Shin. 2023. "Content Moderation and Liability." Jae-Hyuck Park and Dongwook Shin. 2023. "Omnichannel Pricing Strategies under Product Value Uncertianty"

TEACHING EXPERIENCE	HKUST BUSINESS SCHOOL as an Instructor[22]
	  ISOM6890L Service Analytics (PG)
	   - Spring 2023 (L1): Instructor rating 4.70/5.00 (Department mean 4.30/5.00)
	  ISOM4830 Analytics for Service Operations (UG)
	   - Spring 2023 (L1): Instructor rating 4.25/5.00 (Department mean 4.30/5.00)
	   - Spring 2022 (L1): Instructor rating 4.38/5.00 (Department mean 4.24/5.00)
	  ISOM2700 Operations Management (UG)
	   - Fall 2022 (L1): Instructor rating 4.26/5.00 (Department mean 4.25/5.00)
	   - Fall 2022 (L2): Instructor rating 4.46/5.00 (Department mean 4.25/5.00)

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[10]Bharadwaj Kadiyala is an assistant professor at the University of Utah and a research collaborator.
[11]Huijun Chen is my Ph.D. student at HKUST.
[12]Ying-Ju Chen is a professor at the HKUST Business School and a research collaborator.
[13]Sunghyuk Park was a CEO of Recobell, Korea, and now an assistant professor at KAIST College of Business
[14]Jae-Hyuck Park was my postdoctoral fellow at HKUST.
[15]Etienne Boursier is a researcher at INRIA Paris-Saclay and a research collaborator.
[16]Vianney Perchet is a professor at CREST at the ENSAE.
[17]Soo-Haeng Chois a professor at Carnegie Mellon University and a research collaborator.
[18]Eunji Kim was a master's student at KAIST and is now a Ph.D student at the University of Wisconsin.
[19]Sangwon Kim is an associate professor at KAIST, College of Business, and a research collaborator.
[20]Arian Aflaki is an assistant professor at University of Pittsburgh and a research collaborator.
[21]Woonam Hwang is an assistant professor at the University of Utah.
[22]Department mean includes both UG and PG courses.

- Fall 2021 (L6): Instructor rating 4.48/5.00 (Department mean 4.27/5.00)
- Fall 2021 (L7): Instructor rating 4.35/5.00 (Department mean 4.27/5.00)
- Fall 2020 (L1): Instructor rating 4.51/5.00 (Department mean 4.30/5.00)
- Fall 2020 (L2): Instructor rating 4.38/5.00 (Department mean 4.30/5.00)
- Fall 2020 (L5): Instructor rating 4.28/5.00 (Department mean 4.30/5.00)
- Fall 2019 (L1): Instructor rating 78.7/100 (Department mean 84.6/100)
- Fall 2019 (L2): Instructor rating 82.9/100 (Department mean 84.6/100)
- Fall 2019 (L3): Instructor rating 85.1/100 (Department mean 84.6/100)
- Fall 2018 (L1): Instructor rating 82.1/100 (Department mean 80.1/100)
- Fall 2018 (L2): Instructor rating 84.3/100 (Department mean 80.1/100)
- Fall 2018 (L3): Instructor rating 81.1/100 (Department mean 80.1/100)
- Spring 2018 (L1): Instructor rating 71.5/100 (Department mean 80.6/100)
- Spring 2018 (L2): Instructor rating 74.1/100 (Department mean 80.6/100)

GRADUATE SCHOOL OF BUSINESS, COLUMBIA UNIVERSITY as an Instructor
Fall 2015 (1x)   Computing for Business Research (PG)
Fall 2015 (1x)   Introduction to Spreadsheet Optimization/Simulation (PG)

GRADUATE SCHOOL OF BUSINESS, COLUMBIA UNIVERSITY as a Teaching Assistant
Spring 2014 (1x)   Foundations of Stochastic Models (PG)
Spring 2015 (1x)   Computing for Business Research (PG)
Fall 2016 (2x)   Business Analytics (MBA)

RESEARCH GRANTS AND HONORS

Dean's Recognition of Excellent Teaching Performance, HKUST
    Summer and Fall Terms in 2019 - 2022

GRF Research Grant (PI), Hong Kong RGC, Sep. 2021 - Aug. 2024
    Project title: "Optimal Design of Sequential Experiments for Personalized Decision Making"
    Grant amount: HKD 769,393

GRF Research Grant (PI), Hong Kong RGC, Jan. 2021 - Dec. 2023
    Project title: "Optimal Information Provision in Digital Content Markets"
    Grant amount: HKD 564,520

ECS Research Grant (PI), Hong Kong RGC, Oct. 2019 - Mar. 2022
    Project title: "Optimal Budget Allocation for Online Ad Campaigns with Spillover and Carryover Effects"
    Grant amount: HKD 567,200

Research Infrastructure Grant (PI), HKUST, Oct. 2019 - Sep. 2021
    Project title: "Optimal Budget Allocation for Online Ad Campaigns with Spillover and Carryover Effects"
    Grant amount: HKD 30,000

Research Infrastructure Grant (PI), HKUST, Jan. 2021 - Oct. 2021
    Project title: "Optimal Information Provision in Digital Content Markets"
    Grant amount: HKD 28,435

Initiation Grant (PI), HKUST Internal Research Support Schemes, Nov. 2017 - Oct. 2020
    Project title: "Supply Contracts in Online Markets: Retailer Information Sharing and Manufacturer Quality Decision"
    Grant amount: HKD 100,000

Faculty Start-Up Grant (PI), HKUST, Jul. 2017 - Dec. 2023
    Grant amount: HKD 50,000

Jerome A. Chazen Institute for Global Business Doctoral Grants, 2016
    Project title: "Tractable Dynamic Sampling Strategies for Quantile-based Ordinal Optimization"
    Grant amount: USD 10,000

Paul and Sandra Montrone Doctoral Fellowship, 2015
    Grant amount: USD 10,000

Doctoral fellowship, Columbia Business School, 2012-present

Full scholarship at KAIST, 2003-2005, 2008-2009

Best bachelor dissertation award at KAIST, 2009

Finance-Treatise Competition Award, Citibank and Korea Institute of Finance, 2009

INVITED TALKS	"Feature Misspecification in Sequential Learning Problems" INFORMS Annual Meeting, Phoenix, USA (2023)

"Multichannel Advertising: Budget Allocation in the Presence of Spillover and Carryover Effects"
- INFORMS Revenue Management & Pricing Section Conference, London, UK (2023)
- INFORMS MSOM Conference, Montreal, Canada (2023)
- Market Innovation Workshop, Virtual (2023)

"Social Learning with Polarized Preferences on Content Platforms"
- INFORMS Annual Meeting, Phoenix, USA (2023)
- INFORMS MSOM Conference, Montreal, Canada (2023)
- City University of Hong Kong, Hong Kong SAR (2023)
- Hong Kong Polytechnic University, Hong Kong SAR (2022)
- Chinese University of Hong Kong, Hong Kong SAR (2022)
- Market Innovation Workshop, Virtual (2022)
- Frontiers in Operations Management Workshop, HKUST, Hong Kong SAR (2021)
- Hong Kong University, Hong Kong SAR (2021)
- INFORMS Annual Meeting, Virtual (2021)
- INFORMS MSOM Conference, Virtual (2021)

"Dual-Channel Supply Chain Coordination with Strategic Customers"
- INFORMS Revenue Management & Pricing Section Conference, USA (2022)

"Omnichannel Pricing Strategies under Product Value Uncertainty"
- INFORMS MSOM Conference, Munich, Germany (2022)

"Product Quality and Information Sharing in the Presence of Reviews"
- INFORMS MSOM Conference, Singapore (2019)
- POMS Annual Meeting, Washington DC, USA (2019)
- European Conference on Operations Research, Ireland (2019)
- POMS-HK International Conference, Hong Kong SAR (2018)
- INFORMS International Meeting, Taiwan (2018)
- POMS Annual Meeting, Houston, USA (2018)

"Dynamic Pricing with Online Reviews"
- KAIST, Korea (2020)
- Market Innovation Workshop, Stanford University, USA (2019)
- POSTECH, Korea (2018)
- INFORMS Annual Meeting, Houston, USA (2017)
- INFORMS MSOM Conference, Chapel Hill, USA (2017)
- HKUST Business School, Hong Kong SAR (2017)
- CUHK Business School, Hong Kong SAR (2017)
- University of Texas-Austin, Austin, USA (2017)
- McGill University, Montreal, Canada (2017)
- National University of Singapore, Singapore (2017)
- Young Researchers Workshop, Cornell, USA (2016)

"Ordinal Optimization with Generalized Linear Models"
- Winter Simulation Conference, Virtual (2020)

"Practical Sampling Strategies for Quantile-Based Ordinal Optimization"
- INFORMS Annual Meeting, Nashville, USA (2016)
- Brown Bag Seminar, Columbia University, USA (2016)

"Tractable Sampling Strategies for Ordinal Optimization"
- Winter Simulation Conference, Virginia, USA (2016)
- INFORMS Annual Meeting, Philadelphia, USA (2015)

PROFESSIONAL ACTIVITIES	Journal Reviewer Management Science

Operations Research
Manufacturing & Service Operations Management
Production & Operations Management
INFORMS Journal on Computing
Naval Research Logistics
European Journal of Operational Research
Operations Research Letters
Asia-Pacific Journal of Operations Research

Conference Session Chair
POMS-HK International Conference, 2020
International Federation of Operations Research Societies (IFORS), 2021
POMS-HK International Conference, 2023
INFORMS Annual Meeting (3x), 2023

Member
Institute of operations research and management science (INFORMS)
Manufacturing and service operations management (MSOM) society
INFORMS behavioral operations management section
INFORMS service science section

Judge
POMS-HK Best Student Paper Competition, 2018-2020, 2022-2023
INFORMS BOM Best Working Paper Competition, 2023

Workshop (Co-)Organizer
Frontiers in Operations Management Workshop, 2021, 2022
Machine Learning Meets Operations, 2024 (expected)

UNIVERSITY SERVICES

PhD/MPhil committee (OM), member, Sep 2021 - present
MSBA committee, member, Sep 2021 - present
Junior faculty representative to meet RGC panels, Jun 2023
Faculty host for Prof. Yiwen Shen, 2021 - 2022
PhD qualifying exam (OM), exam writer, 2019, 2020, 2021, 2023
UG faculty mentor program, Feb 2021 and Feb 2022
GRF and ECS proposal writing workshop, panel, Aug 2020
Promotion talks for Ph.D program (OM) and MSGO program
    KAIST, Dec 2020
    POSTECH, Dec 2018
ISOM-IEDA joint empirical study group, co-organizer, Sep 2019 - Nov 2019
ISOM department clothing design and production, 2019
UG JUPAS interviews
    2022: May 28
    2021: Jun 5
MSGO admission interviews
    2023: Jan 10, Jan 13, Feb 22, Feb 24
    2022: Jan 7, Jan 12, Mar 1, Mar 24, Nov 16, Nov 23
    2021: Jan 13, Jan 20, Mar 5
    2020: Jan 14, Jan 15, Nov 25
    2019: Jan 16, Jan 17, Mar 5, Nov 25
    2018: Jan 8, Nov 23, Nov 27
    2017: Nov 21
MSBA admission interviews
    2023: Jan 16, Jan 17, Mar 1, Mar 3, Mar 6, Apr 13
    2022: Jan 5, Jan 14, Jan 24, Mar 3, Mar 10, Apr 14, Apr 21, Nov 21, Nov 22

MPHIL / DOCTORAL STUDENTS ADVISING

Huijun Chen (ISOM), Ph.D. thesis co-supervisor, Sep 2018 - present
Jae-Hyuck Park (ISOM), Postdoctoral advisor, Mar 2021 - May 2023

Iravani Mohammadabadi Mina (IEDA), Ph.D. thesis committee member, Aug 2023
Hu Huang (ISOM), Ph.D. thesis committee member, Aug 2021
Xiaojin Fu (IELM), Ph.D. thesis committee member, Aug 2020

SOFTWARE   BUSINESS ANALYTICS EXCEL ADD-IN, Graduate School of Business, Columbia University
An Excel Add-in that contains useful analytical tools, e.g., multivariate linear/logistic regression, portfolio optimization, and Monte Carlo simulation, that are not natively available in Excel. Developed for use in MBA core and elective courses at Columbia Business School. Joint work with Mark Broadie and Ciamac Moallemi.