

DONGWOOK SHIN

CONTACT INFORMATION Department of ISOM
HKUST Business School
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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
Associate Professor, Operations Management, 2024-present
Assistant Professor, Operations Management, 2017-2024

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 Mark Broadie, Dongwook Shin, and Assaf Zeevi. 2018. Tractable Dynamic Sampling Strategies for Ordinal Optimization. *Operations Research*, 66(6):1693-1712.
Mark Broadie, Dongwook Shin, and Assaf Zeevi. 2022. Practical Nonparametric Sampling Strategies for Quantile-based Ordinal Optimization. *INFORMS Journal on Computing*, 34(2): 752-768.
Dongwook Shin, Stefano Vaccari, and Assaf Zeevi. 2023. Dynamic Pricing with Online Reviews. *Management Science*, 69(2):824-845.
Dongwon Lee, Anandasivam Gopal, Dokyun Lee, 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
Costis Maglaras, Marco Scarsini, Dongwook Shin, and Stefano Vaccari. 2023. Product Ranking in the Presence of Social Learning. *Operations Research*, 71(4):1136-1153.
Dongwook Shin and Assaf Zeevi. 2024. Product Quality and Information Sharing in the Presence of Reviews. *Management Science*, 70(3):1428-1447.
Dohyun Ahn, Dongwook Shin, and Assaf Zeevi. "Feature Misspecification in Sequential Learning Problems." *Management Science*, Articles in Advance:1-21.
Bharadwaj Kadiyala and Dongwook Shin. "Social Learning and Content Quality Under Polarization." *Manufacturing & Service Operations Management*, 26(6):2237-2255.
- First place winner in 2023 Service Science Best Cluster Paper Competition
Huijun Chen, Ying-Ju Chen, Sunghyuk Park, and Dongwook Shin.
"Multichannel Advertising: Budget Allocation in the Presence of Spillover and Carryover Effects." Forthcoming in *Manufacturing & Service Operations Management*.
- Draft available in SSRN.

PAPERS IN CONFERENCE PROCEEDINGS	<p>Dohyun Ahn and Dongwook Shin. 2020. Ordinal Optimization with Generalized Linear Models. <i>Proceedings of 2020 Winter Simulation Conference</i>.</p> <p>Dongwook Shin, Mark Broadie, and Assaf Zeevi. 2022. Practical Nonparametric Sampling Strategies for Quantile-Based Ordinal Optimization. <i>Proceedings of 2022 Winter Simulation Conference</i>.</p> <p>Dohyun Ahn, Dongwook Shin, and Lewen Zheng. 2024. Best-Arm Identification with High-Dimensional Features. <i>Proceedings of 2024 Winter Simulation Conference</i>.</p>
PAPERS UNDER REVIEW	<p>Mark Broadie and Dongwook Shin. "A Golf Putting Model for Optimal Targeting Strategy and Attribution Analysis." Submitted to <i>Journal of Quantitative Analysis in Sports</i> in 2023. - Draft available upon request</p> <p>Jae-Hyuck Park and Dongwook Shin. "Channel Selection and Coordination in Omnichannel Retailing with Strategic Customers under Product Value Uncertainty." Submitted to <i>European Journal of Operational Research</i> in 2023. - Draft available upon request</p>
WORKING PAPERS	<p>Etienne Boursier, Vianney Perchet, Marco Scarsini, and Dongwook Shin. 2023. "Social Learning with Multivariate Features."</p> <p>Soo-Haeng Cho, Eunji Kim, Sangwon Kim, and Dongwook Shin. 2023. "Product Quality in the Presence of Social Learning from Multi-Dimensional Online Ratings."</p> <p>Arian Aflaki, Bharadwaj Kadiyala, and Dongwook Shin. 2023. "Signaling Quality with Delayed Incentives."</p> <p>Woonam Hwang, Bharadwaj Kadiyala, and Dongwook Shin. 2023. "Content Moderation and Liability."</p> <p>Jae-Hyuck Park and Dongwook Shin. 2023. "Omnichannel Pricing Strategies under Product Value Uncertainty"</p>
TEACHING EXPERIENCE	<p>HKUST BUSINESS SCHOOL as an Instructor</p> <p>Spring 2018 (2x) ISOM2700 Operations Management (UG)</p> <p>Fall 2018 (3x) ISOM2700 Operations Management (UG)</p> <p>Fall 2019 (3x) ISOM2700 Operations Management (UG)</p> <p>Fall 2020 (3x) ISOM2700 Operations Management (UG)</p> <p>Fall 2021 (2x) ISOM2700 Operations Management (UG)</p> <p>Spring 2022 (1x) ISOM4830 Analytics for Service Operations (UG)</p> <p>Fall 2022 (2x) ISOM2700 Operations Management (UG)</p> <p>Spring 2023 (1x) ISOM4830 Analytics for Service Operations (UG)</p> <p>Spring 2023 (1x) ISOM6890L Service Analytics (PG)</p> <p>Spring 2024 (1x) ISOM4830 Analytics for Service Operations (UG)</p> <p>Spring 2024 (1x) ISOM6890L Service Analytics (PG)</p> <p>GRADUATE SCHOOL OF BUSINESS, COLUMBIA UNIVERSITY as an Instructor</p> <p>Fall 2015 (1x) Computing for Business Research (PG)</p> <p>Fall 2015 (1x) Introduction to Spreadsheet Optimization/Simulation (PG)</p> <p>GRADUATE SCHOOL OF BUSINESS, COLUMBIA UNIVERSITY as a Teaching Assistant</p> <p>Spring 2014 (1x) Foundations of Stochastic Models (PG)</p> <p>Spring 2015 (1x) Computing for Business Research (PG)</p> <p>Fall 2016 (2x) Business Analytics (MBA)</p>
RESEARCH GRANTS AND HONORS	<p>Dean's Recognition of Excellent Teaching Performance, HKUST, 2019 - 2022</p> <p>GRF Research Grant (PI), Hong Kong RGC, 2024-2026 Project title: "Social Learning from Online Reviews: The Value of Personalized Signaling" Grant amount: HKD 551,702</p> <p>GRF Research Grant (PI), Hong Kong RGC, 2021-2024</p>

Project title: “Optimal Design of Sequential Experiments for Personalized Decision Making”
 Grant amount: HKD 769,393
 GRF Research Grant (PI), Hong Kong RGC, 2021-2023
 Project title: “Optimal Information Provision in Digital Content Markets”
 Grant amount: HKD 564,520
 ECS Research Grant (PI), Hong Kong RGC, 2019-2021
 Project title: “Optimal Budget Allocation for Online Ad Campaigns with Spillover and Carryover Effects”
 Grant amount: HKD 567,200
 Initiation Grant (PI), HKUST Internal Research Support Schemes, 2017-2020
 Project title: “Supply Contracts in Online Markets: Retailer Information Sharing and Manufacturer Quality Decision”
 Grant amount: HKD 100,000
 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

SERVICE AND PROFESSIONAL ACTIVITIES
 Reviewer for *Management Science* journal — Impact Factor: 5.4
 Reviewer for *Operations Research* journal — Impact Factor: 2.7
 Reviewer for *Manufacturing & Service Operations Management* journal — Impact Factor: 6.3
 Reviewer for *Production & Operations Management* journal — Impact Factor: 5.0
 Reviewer for *INFORMS Journal on Computing* journal — Impact Factor: 2.1
 Reviewer for *Naval Research Logistics* journal — Impact Factor: 2.3
 Reviewer for *European Journal of Operational Research* journal — Impact Factor: 6.4
 Reviewer for *Operations Research Letters* journal — Impact Factor: 1.1
 Reviewer for *Asia-Pacific Journal of Operations Research* journal — Impact Factor: 1.0
 Judge, POMS-HK Best Student Paper Competition, 2018-2023
 Organizing committee, 2011 Frontiers in Operations Management Workshop (HKUST)
 Organizing committee, 2012 Frontiers in Operations Management Workshop (HKUST)
 Session chair, 2020 POMS-HK International Conference
 Session chair, 2021 International Federation of Operations Research Societies (IFORS), Korea
 Session chair, 2022 POMS-HK International Conference
 Session chair (3x), 2023 INFORMS Annual Meeting, Phoenix USA
 Member of
 - Institute of operations research and management science (INFORMS)
 - Manufacturing and service operations management (MSOM) society
 - INFORMS behavioral operations management section
 - INFORMS service science section

INVITED TALKS
 “Feature Misspecification in Sequential Learning Problems”
 INFORMS Annual Meeting, Seattle, USA (2024)
 Shanghai Jiao Tong University, Shanghai, China (2024)
 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 Preference on Content Platforms”

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)

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.