

Joonho Bae

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Academic Appointments

Kelley School of Business, Indiana University	Bloomington, IN
Assistant Professor of Operations and Decision Technologies	Jan 2026 –
Acting Assistant Professor of Operations and Decision Technologies	July 2025 – Dec 2025

Education

Stephen M. Ross School of Business, University of Michigan	Ann Arbor, MI
Ph.D. in Business Administration, Technology & Operations	2026
Committee: Roman Kapuscinski (Chair), John Silberholz, Eric Schwartz, and Xiuli Chao	
Dissertation: Optimizing Battery Use for a More Sustainable Energy System	
<ul style="list-style-type: none"> Rackham Predoctoral Fellow (Highest research award at the University of Michigan) 	
Korea Advanced Institute of Science and Technology (KAIST)	South Korea
M.S. in Industrial & Systems Engineering	2019
Seoul National University (SNU)	South Korea
B.S. in Statistics, Minor in Financial Economics	2016

Research Interests

Topics: Sustainable operations; energy market; battery systems; risk management
Methodology: Optimization; dynamic programming; data-driven decision making

Research

Published Papers

- Cost-Saving Synergy: Energy Stacking in Battery Energy Storage Systems (with Roman Kapuscinski and John Silberholz). 2026. **Management Science**, 72(5), 3906–3924. [\[Link\]](#)
- A Recommending System for Mobile Games using the Dynamic Nonparametric Model (with Jeonghye Choi, Jinkyoo Park, and Seung-Bum Soh), 2023. **Journal of Business Research**, 167, 114079. [\[Link\]](#)
- Count-Based Change-Point Detection via Multi-Output Log-Gaussian Cox Processes (with Jinkyoo Park), 2020. **IIE Transactions** (formerly IIE Transactions), 52(9), 998–1013. [\[Link\]](#)
 - Preliminary version appeared at 2018 *Stochastic Processes and their Applications*, Gothenburg, Sweden

Working Papers

4. Dynamic Operational versus Financial Hedging for a Risk-Averse Firm. [\[Link\]](#)
 - Co-authors: Roman Kapuscinski and Wanshan Zhu
5. Dynamic Valuation of a Battery under Performance Degradation.
 - Co-authors: Roman Kapuscinski and John Silberholz
6. Joint Valuation of a Battery Portfolio: Benefits of Heterogeneity
 - Co-authors: Roman Kapuscinski and John Silberholz
7. Human-AI Cooperation or Competition? Optimize Data Sharing in Digital Markets. [\[Link\]](#)
 - Co-authors: Zijin Zhang
8. No Label, No Problem? Retail Dynamics of Label-Free Bottles.
 - Co-authors: Yeolim Bella Yoon and Yeohong Yoon
9. Shorter Workweeks Shifting Wallets: How a Sustainable Labor Policy Reshapes Consumer Spending.
 - Co-authors: Yeolim Bella Yoon and Yeohong Yoon

Work in Progress

10. Winds of Uncertainty: How Political Shocks Reshape Daily Life
 - Co-authors: Yeohong Yoon and Eunkyung An
11. Coordinating Customer-Owned Batteries Through Incentives
 - Co-authors: Jerry Anunrojwong and Ali Fattahi

Teaching Experience

Instructor – Indiana University Bloomington

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| Supply Chain Management with Digital Technologies (P 319, BBA; class size 30) | 2026 |
| Business Analytics and Modeling (K 353, BBA; class size 38) | 2026 |

Instructor – University of Michigan

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| U-M Graduate Teacher Certificate [Link] | 2022 |
| <ul style="list-style-type: none">- Granted to individuals for their accomplished pedagogical training and experience as college-level instructors at the University of Michigan | |
| Operations Management (TO 313, BBA Core; class size 79) | 2021 |
| <ul style="list-style-type: none">- Recipient, 2022 – 2023 Gerald and Lillian Dykstra Fellowship for Teaching Excellence (Top 1-2 graduate student instructors in Ross School of Business) | |

Teaching Assistant – University of Michigan (Graduate-Level Courses)

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| Applied Analytics for Decision Making (WMBA 623, avg. class size 45) | 2022 – 2023 |
| Managerial Big Data Analytics (EMBA 610, class size 75) | 2023, 2025 |
| Manufacturing and Supply Operations (TO 605, avg. class size 80) | 2020 – 2023 |
| Analytics Primer (avg. class size 45) | 2020 – 2023 |
| Applied Business Statistics (WMBA 503, class size 114) | 2022 |

Teaching Assistant – KAIST (Undergraduate-Level Courses)

Data-Driven Decision Making and Control (IE 481, class size 26)	2018
Engineering Statistics I (IE 241, class size 50)	2018

Professional Experience

Dean's Office, University of Michigan, *Analytical Specialist* 2023 – 2025

- Assisted the Dean's Office at Ross School of Business with analytical projects

KAIST, *Research Fellow* 2019

- System Intelligence Lab. (PI: Jinkyoo Park), Sponsors: **LG CNS & LG Chem**
- Developed real-time monitoring systems for battery energy storage systems (BESS)
- Implemented a data-driven approach to estimate state of health for BESS

SK Telecom, *Marketing Manager* 2015 – 2017

- Managed more than 40 stores in Seoul, South Korea
- Developed optimizing tools for distribution of the cell phones

Cham Son Gil Cooperative, *Co-Founder & Project Leader* 2013 – 2015

- Established a healing center for blind masseurs and developed service/products targeting 20-30s, who were not the main customers of the original market
- Expanded branches to nationwide (12 branches as of 2025), ensuring \$3,000 monthly income for each masseur on average

Seoul National University, *Research Assistant* 2012 – 2013

- Time Series Lab. (PI: Sinsub Cho)
- Revised the Korean Educational Statistics Software for statistical analysis in Excel

8th U.S. Army, *Sergeant* 2010 – 2012

- Served as Korean Augmentation to the United States Army (KATUSA)
- Honorably discharged as sergeant (Army Commendation Medal)

Presentations (* denotes scheduled)

2026	POMS Annual Conference, INFORMS Annual Conference*
2025	University of Toronto (Rotman Young Scholar Seminar), INFORMS Annual Conference
2024	POMS Annual Conference, KAIST, M&SOM Annual Conference, INFORMS Annual Conference, DSI Annual Conference
2023	Early-Career Sustainable Operations Workshop, POMS-HK Conference, POMS Annual Conference, M&SOM Annual Conference, INFORMS Annual Meeting
2022	M&SOM Annual Conference, INFORMS Annual Meeting
2021	INFORMS Annual Meeting
2018	Yonsei University Business School, Stochastic Processes and their Applications Conference, Global Marketing Conference, INFORMS Annual Meeting

Awards & Honors

University of Michigan, Rackham Graduate Student Research Grant	2025
University of Michigan, Rackham Predoctoral Fellowship Award [Link]	2024 – 2025
- Highest award for doctoral research at the University of Michigan	
University of Michigan, Ross School of Business Research Merit Award	2024
University of Michigan, Ross School of Business Fellowship	2019 – 2024
Gerald and Lillian Dykstra Fellowship for Teaching Excellence	2022 – 2023
University of Michigan, Ross School of Business Doctoral Research Grant	2023
University of Michigan Graduate Teacher Certificate (GTC)	2022
University of Michigan, Ross Early PhD Candidacy Award	2021
KOSAF, National Scholarship (Science & Technology)	2009 – 2015
Ministry of Employment & Labor of South Korea, Social Venture Idea	2014
Enactus (Entrepreneurial Action Us), National Competition	2014
Seoul Metropolitan Government, Hope Advertisement	2014
Soonchunhyang University, SCH Social Venture Idea	2013
SK Happiness Foundation, SK Social Enterprise	2013

Service Activities

Ad hoc Reviewer, Manufacturing & Service Operations Management, Production and Operations Management, Transportation Research Part E, Omega

Session Chair, POMS Annual Conference 2024 (Energy Markets and Storage), INFORMS Annual Meeting 2021 (Energy Sector)

University of Michigan Ross PhD Forum Research Committee Chair	2022 – 2023
University of Michigan Ross PhD Forum Research Committee Member	2020 – 2023
Cham Son Gil Cooperative Non-Profit Business Consulting	2015 – 2017

Other Information

Optimization/data analysis tools: Gurobi, CVX, Python, MATLAB, R, C, Tableau

Languages: Korean (native), English (fluent)

Hobbies: Weightlifting, running