Joonho Bae

Kelley School of Business   baejoon@iu.edu
Indiana University   +1 734 881 4852
1309 E. 10th Street, HH4080R   joonhobae.com
Bloomington, IN 47405

Academic Appointments

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

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	*(expected)*
Dissertation: Optimizing Battery Use for a More Sustainable Energy System	

- 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 and Accepted Papers

1. Cost-Saving Synergy: Energy Stacking in Battery Energy Storage Systems (with Roman Kapuscinski and John Silberholz). Forthcoming in **Management Science**. [Link]

2. 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]

3. Count-Based Change-Point Detection via Multi-Output Log-Gaussian Cox Processes (with Jinkyoo Park), 2020. **IISE 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
    -   In preparation for resubmission

5. Dynamic Valuation of a Battery under Performance Degradation.
    -   Co-authors: Roman Kapuscinski and John Silberholz
    -   Preparing for submission

6. Human-AI Cooperation or Competition? Optimize Data Sharing in Digital Markets.
    -   Co-authors: Zijin Zhang
    -   Preparing for submission

Work in Progress

7. Joint Valuation of a Battery Portfolio: Benefits of Heterogeneity
    -   Co-authors: Roman Kapuscinski and John Silberholz

8. Coordinating Customer-Owned Batteries Through Incentives
    -   Co-authors: Jerry Anunrojwong and Ali Fattahi

Teaching Experience

Instructor – Indiana University Bloomington

Supply Chain Management with Digital Technologies (P 319, BBA; avg. class size 40)	*2025*
Business Analytics and Modeling (K 353, BBA; class size 38)	*2025*

Instructor – University of Michigan

U-M Graduate Teacher Certificate [Link]	*2022*

-   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*

-   Instructor evaluation: 4.9/5.0 [Link]
-   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)

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*
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

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